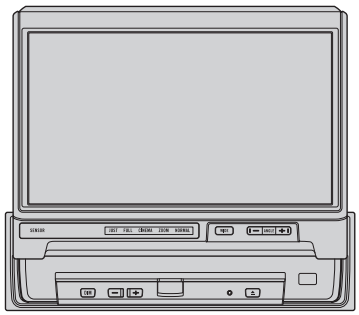
Service Manual



ORDER NO.
CRT2380

7 INCH WIDE AV SYSTEM DISPLAY

AVX-7000 UC

AVX-7000 EW

AVX-7000 ES

NOTE:

● For the details of the LCD module and the drive mech unit, refer to the separate manual CRT2276.

CONTENTS

PIONEER ELECTRONIC CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153-8654, Japan
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PIONEER ELECTRONIC [EUROPE] N.V. Haven 1087 Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE.LTD. 253 Alexandra Road, #04-01, Singapore 159936

K-ZZU. APR. 1999 Printed in Japan

1. SAFETY INFORMATION

CAUTION

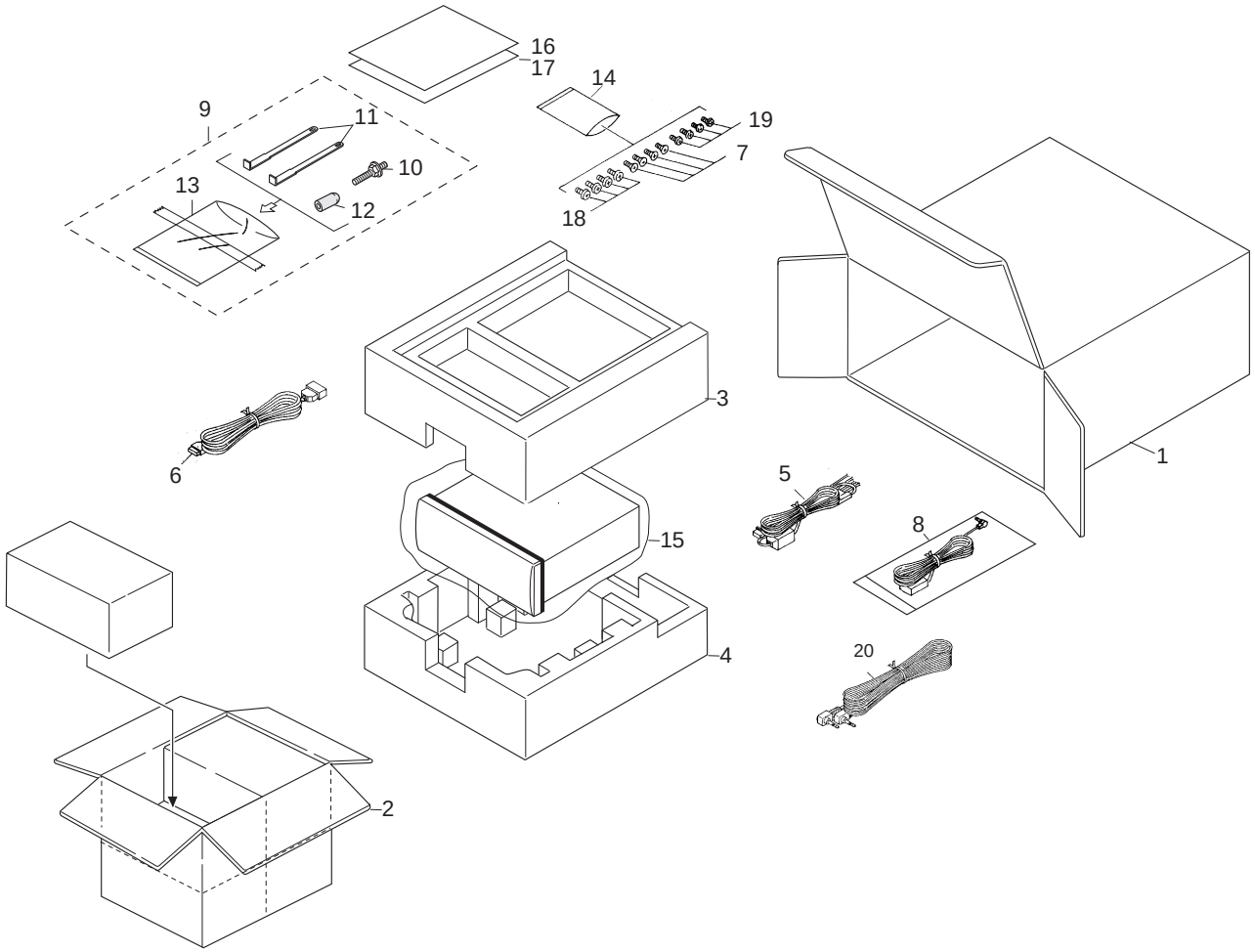
This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer.
Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty.
If you are not qualified to perform the repair of this product properly and safely, you should mot risk trying to do so and refer the repair to a qualified service technician.

WARNING

This product contains lead in solder and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.
Health & Safety Code Section 25249.6 - Proposition 65

2. EXPLODED VIEWS AND PARTS LIST

2.1 PACKING



NOTE:

● Parts marked by "*"are generally unavailable because they are not in our Master Spare Parts List.

● Screws adjacent to ∇ mark on the product are used for disassembly.

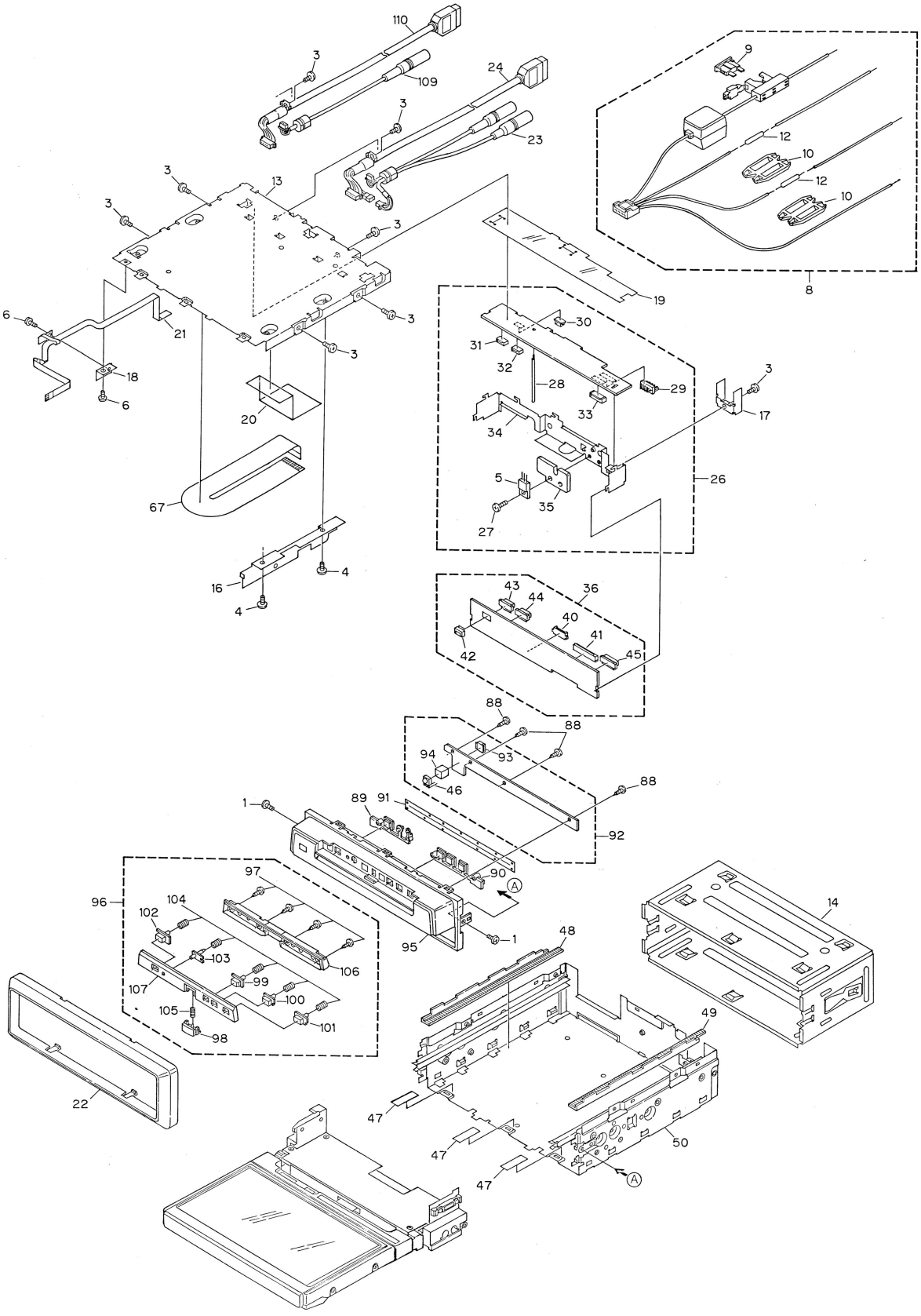
● PACKING SECTION PARTS LIST

Mark	No.	Description	Part No. AVX-7000/UC	AVX-7000/EW	AVX-7000/ES
	1	Carton	CHG3807	CHG3805	CHG3806
	2	Contain Box	CHL3807	CHL3805	CHL3806
	3	Protector	CHP2163	CHP2163	CHP2163
	4	Protector	CHP2164	CHP2164	CHP2164
	5	Cord Assy	CDE5932	CDE5932	CDE5932
	6	Cord Assy	CDE5908	CDE5908	CDE5908
	7	Screw	CMZ50P060FMC	CMZ50P060FMC	CMZ50P060FMC
	8	Speaker Assy	CXB4203	CXB4203	Not used
	9	Accessory Assy	CEA2547	CEA2547	CEA2547
	10	Screw	CBA1002	CBA1002	CBA1002
	11	Handle	CNC5395	CNC5395	CNC5395
	12	Bush	CNV1917	CNV1917	CNV1917
*	13	Polyethylene Bag	E36-615	E36-615	E36-615
*	14	Polyethylene Bag	CEG-127	CEG-127	CEG-127
	15	Polyethylene Bag	CEG1173	CEG1042	CEG1042
	16-1	Owner's Manual	CRD3012	CRD3016	CRD3044
	16-2	Installation Manual	Not used	CRD3017	Not used
*	16-3	Warranty Card	Not used	CRY1087	Not used
*	16-4	Card	ARY1048	Not used	Not used
	17	Polyethylene Bag	Not used	CEG1116	Not used
	18	Screw	CBA1468	CBA1468	CBA1468
	19	Screw	BMZ50P060FMC	BMZ50P060FMC	BMZ50P060FMC
	20	Cord Assy	CDE5939	CDE5939	CDE5939

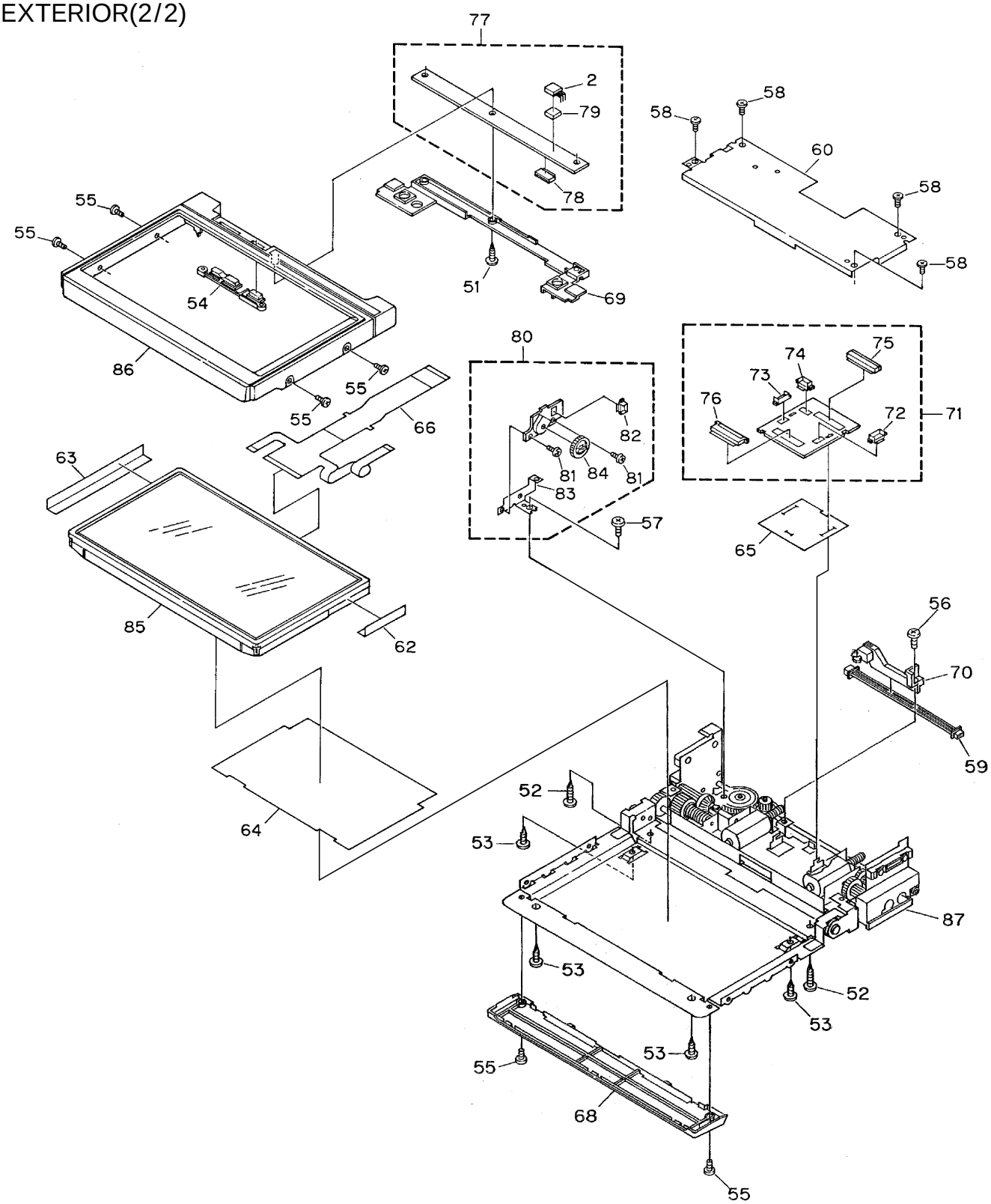
● Owner's Manual and Installation Manual

Model	Part No.	Language
AVX-7000/UC	CRD3012	English,French
AVX-7000/EW	CRD3016	English,Spanish,Dutch,German,French,Italian
	CRD3017	English,Spanish,Dutch,German,French,Italian
AVX-7000/ES	CRD3044	English,Spanish

2.2 EXTERIOR(1/2)



EXTERIOR(2/2)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(1) EXTERIOR SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	Screw	BMZ26P050FZK
	2	IC(IC24)	PNA4603H00LB
	3	Screw	BSZ26P040FMC
	4	Screw	BSZ30P040FMC
	5	Transistor(Q1809)	2SD2396
	6	Screw(M2x2)	CBA1487
	7	•••••	
	8	Cord Assy	CDE5932
	9	Fuse(4A)	CEK1001
	10	Cap	CNS1472
	11	•••••	
	12	Resistor	RS1/2PMF102J
	13	Case	CNB2459
	14	Holder	CNC6798
	15	•••••	
	16	Bracket	CNC8261
	17	Holder	CNC8359
	18	Holder	CNC8387
	19	Insulator	CNM6199
	20	Insulator	CNM6335
	21	PCB	CNP5539
	22	Panel	See Contrast table(2)
	23	Cord Assy	See Contrast table(2)
	24	Cord Assy	See Contrast table(2)
	25	•••••	
	26	System Unit	See Contrast table(2)
	27	Screw	ASZ26P100FMC
	28	Clamper	CEF1009
	29	Plug(CN1801)	CKS-461
	30	Connector(CN1604)	CKS3125
	31	Connector(CN1601)	CKS4064
	32	Connector(CN1602)	CKS4064
	33	Connector(CN1603)	CKS4066
	34	Holder	CNC8259
	35	Heat Sink	CNC8262
	36	RGB Unit	CWM6435
	37	•••••	
	38	•••••	
	39	•••••	
	40	Connector(CN2901)	CKS3133
	41	Connector(CN2902)	CKS3971
	42	Connector(CN2602)	CKS4054
	43	Connector(CN2603)	CKS4063
	44	Connector(CN2604)	CKS4063
	45	Connector(CN2605)	CKS4065
	46	IC(IC1)	SBX8035-H
	47	Spacer	CNM6200
	48	Rack	CNV5737
	49	Rack	CNV5738
	50	Chassis Unit	CXB3769

Mark	No.	Description	Part No.
	51	Screw	BPZ20P100FMC
	52	Screw	BPZ20P120FZK
	53	Screw	BPZ26P050FMC
	54	Button(ANGEL,WIDE)	See Contrast table(2)
	55	Screw	See Contrast table(2)
	56	Screw	CBA1481
	57	Screw	CBA1482
	58	Screw	CBA1484
	59	Connector	CDE5924
	60	Case	CNC8405
	61	•••••	
	62	Insulator	CNM6314
	63	Insulator	CNM6315
	64	Insulator	CNM6339
	65	Insulator	CNM6340
	66	PCB	CNP5449
	67	PCB	CNP5543
	68	Cover	See Contrast table(2)
	69	Holder	CNV5744
	70	Holder	CNV5842
	71	Relay Unit	CWM6425
	72	Connector(CN52)	CKS3124
	73	Connector(CN53)	CKS3124
	74	Connector(CN57)	CKS3125
	75	Connector(CN51)	CKS3802
	76	Connector(CN55)	CKS4132
	77	LCD Keyboard Unit	See Contrast table(2)
	78	Connector(CN21)	CKS4057
	79	Spacer	CNM6271
	80	Encoder Unit	CWM6587
	81	Screw	CBA1483
	82	Connector(CN56)	CKS3125
	83	Bracket	CNC8406
	84	Gear	CNV5841
	85	LCDModule	CWX2389
	86	Grille Unit	See Contrast table(2)
	87	Drive Mechanism Unit	See Contrast table(2)
	88	Screw	BPZ20P060FMC
	89	Button	CAC6025
	90	Button	CAC6026
*	91	Cover	CNM6470
	92	Panel Keyboard Unit	See Contrast table(2)
	93	Connector(CN1)	CKS4054
	94	Spacer	CNM6272
	95	Grille Unit	See Contrast table(2)
	96	Detach Grille Assy	See Contrast table(2)
	97	Screw	BPZ20P060FZK
	98	Button(Detach)	See Contrast table(2)
	99	Button(+)	See Contrast table(2)
	100	Button(-)	See Contrast table(2)

Mark	No.	Description	Part No.
	101	Button(DIM)	See Contrast table(2)
	102	Button(OPEN/CLOSE)	See Contrast table(2)
	103	Button(RESET)	See Contrast table(2)
	104	Spring	CBH22239
	105	Spring	CBH2302
	106	Cover	See Contrast table(2)
	107	Grille	See Contrast table(2)
	108	•••••	
	109	Cord Assy	See Contrast table(2)
	110	Cord Assy	See Contrast table(2)

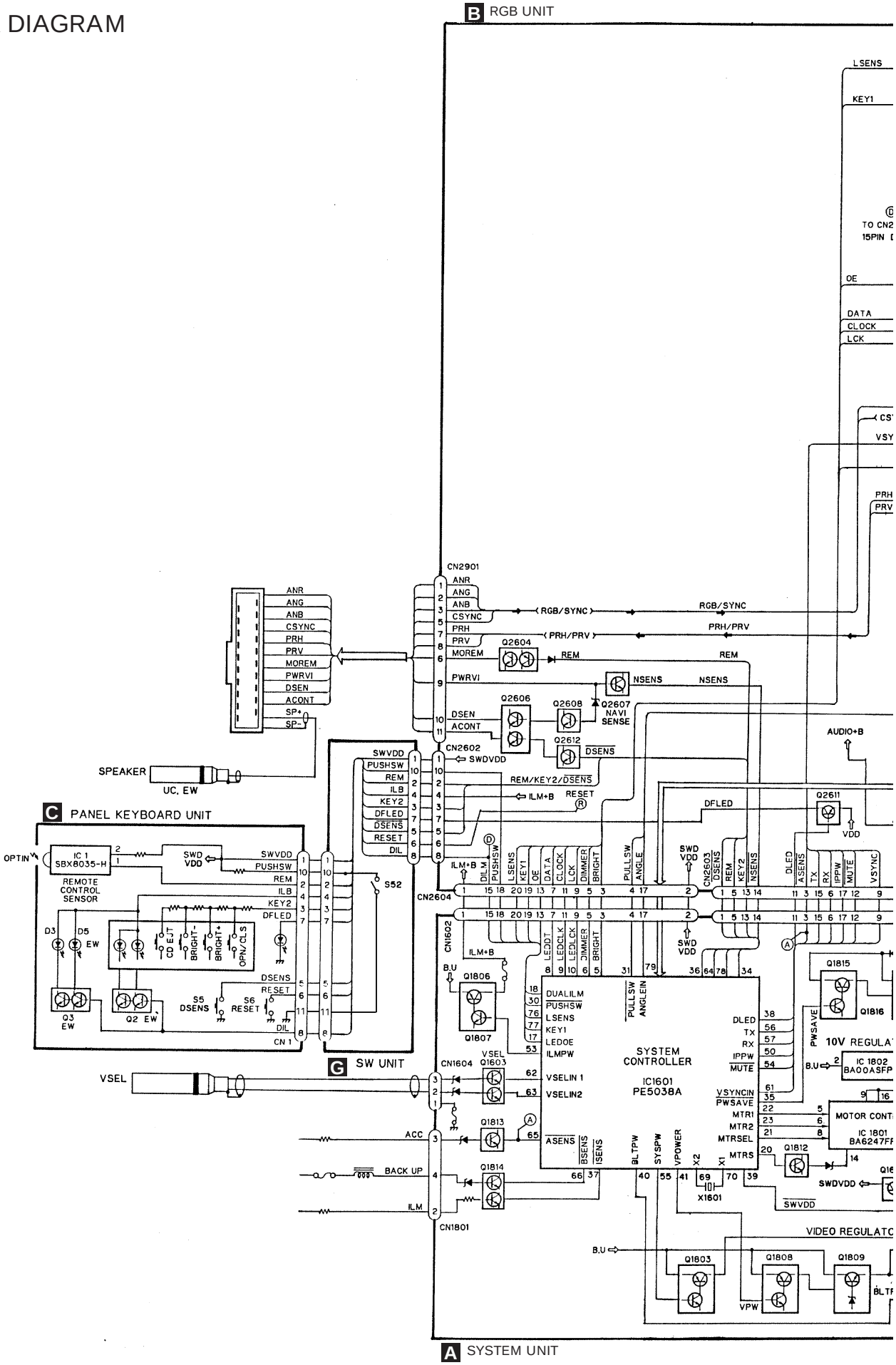
(2) CONTRAST TABLE

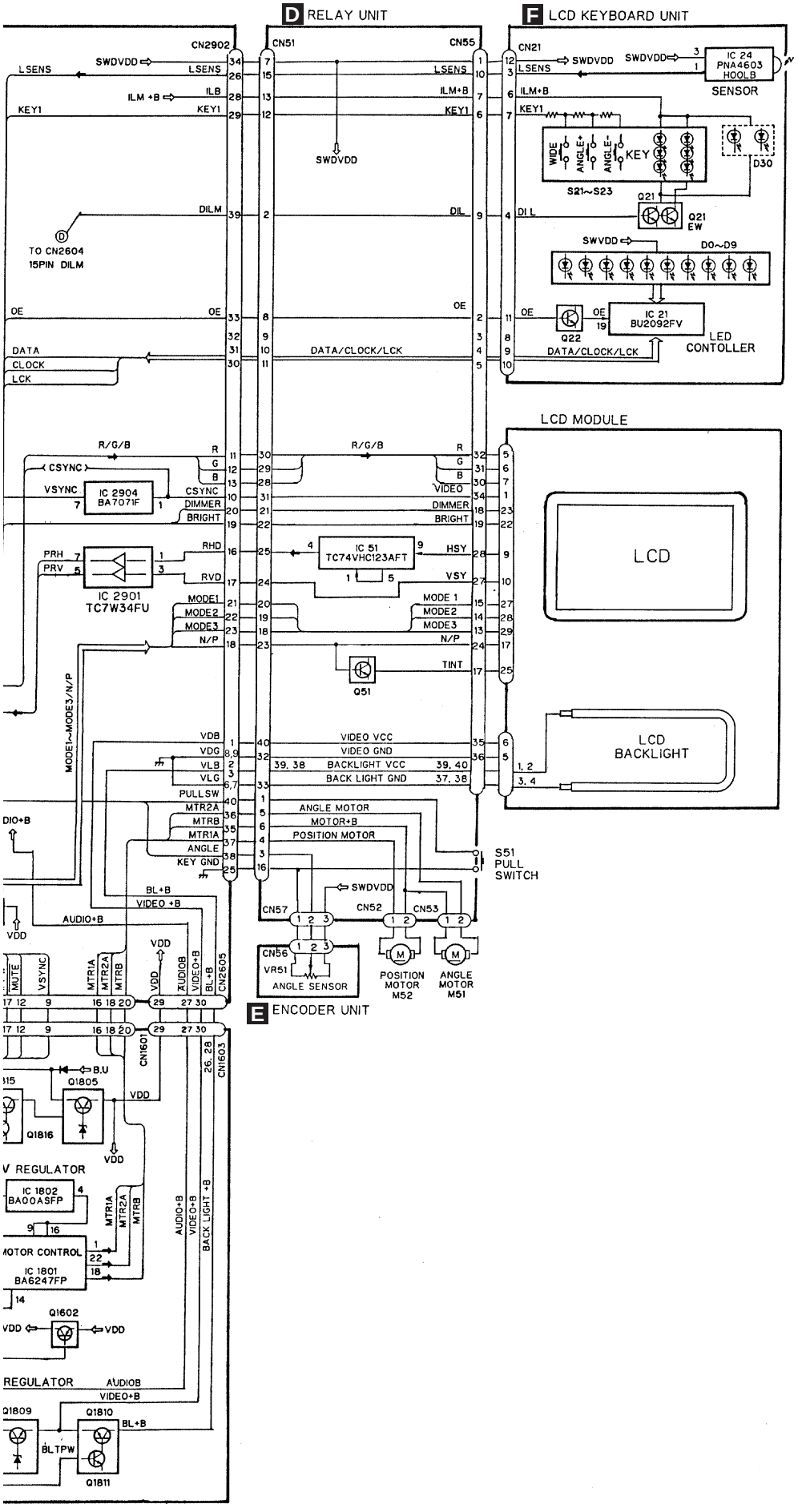
AVX-7000/UC , AVX-7000/EW and AVX-7000/ES are constructed the same except for the following:

			Part No.		
Mark	No.	Description	AVX-7000/UC	AVX-7000/EW	AVX-7000/ES
	22	Panel	CNS5427	CNS5427	CNS5550
	23	Cord Assy	CDE5934	CDE5934	Not used
	24	Cord Assy	CDE6030	CDE6030	Not Used
	26	System Unit	CWM6433	CWM6434	CWM6433
	54	Button	CAC6107	CAC6107	CAC6024
	55	Screw	CBA1477	CBA1477	CBA1475
	68	Cover	CNS5499	CNS5499	CNS5420
	77	LCD Keyboard Unit	CWM6426	CWM6427	CWM6426
	86	Grille Unit	CXB4535	CXB4535	CXB4536
	87	Drive Mechanism Unit	CXB4204	CXB4204	CXB4205
	92	Panel Keyboard Unit	CWM6439	CWM6438	CWM6439
	95	Grille Unit	CXB4552	CXB4552	CXB4553
	96	Detach Grille Assy	CXB4230	CXB4229	CXB4231
	98	Button	CAC6031	CAC6031	CAC6151
	99	Button	CAC6108	CAC6108	CAC6027
	100	Button	CAC6109	CAC6109	CAC6028
	101	Button	CAC6149	CAC6149	CAC6050
	102	Button	CAC6111	CAC6111	CAC6030
	103	Button	CAC6112	CAC6112	CAC6032
	106	Cover	CNS5503	CNS5503	CNS5424
	107	Grille	CNS5507	CNS5506	CNS5508
	109	Cord Assy	Not used	Not used	CDE5937
	110	Cord Assy	Not used	Not used	CDE6070

3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

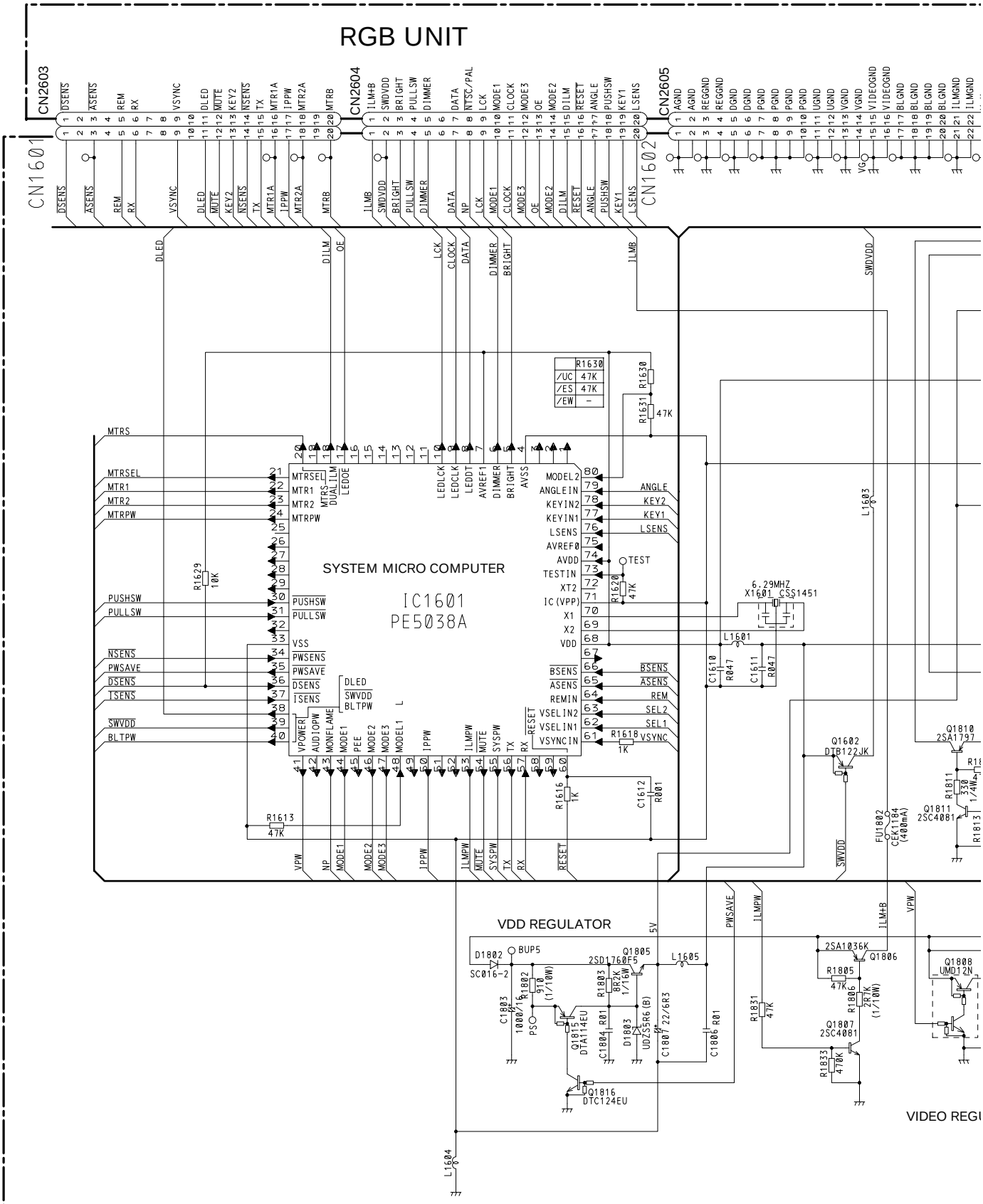
3.1 BLOCK DIAGRAM

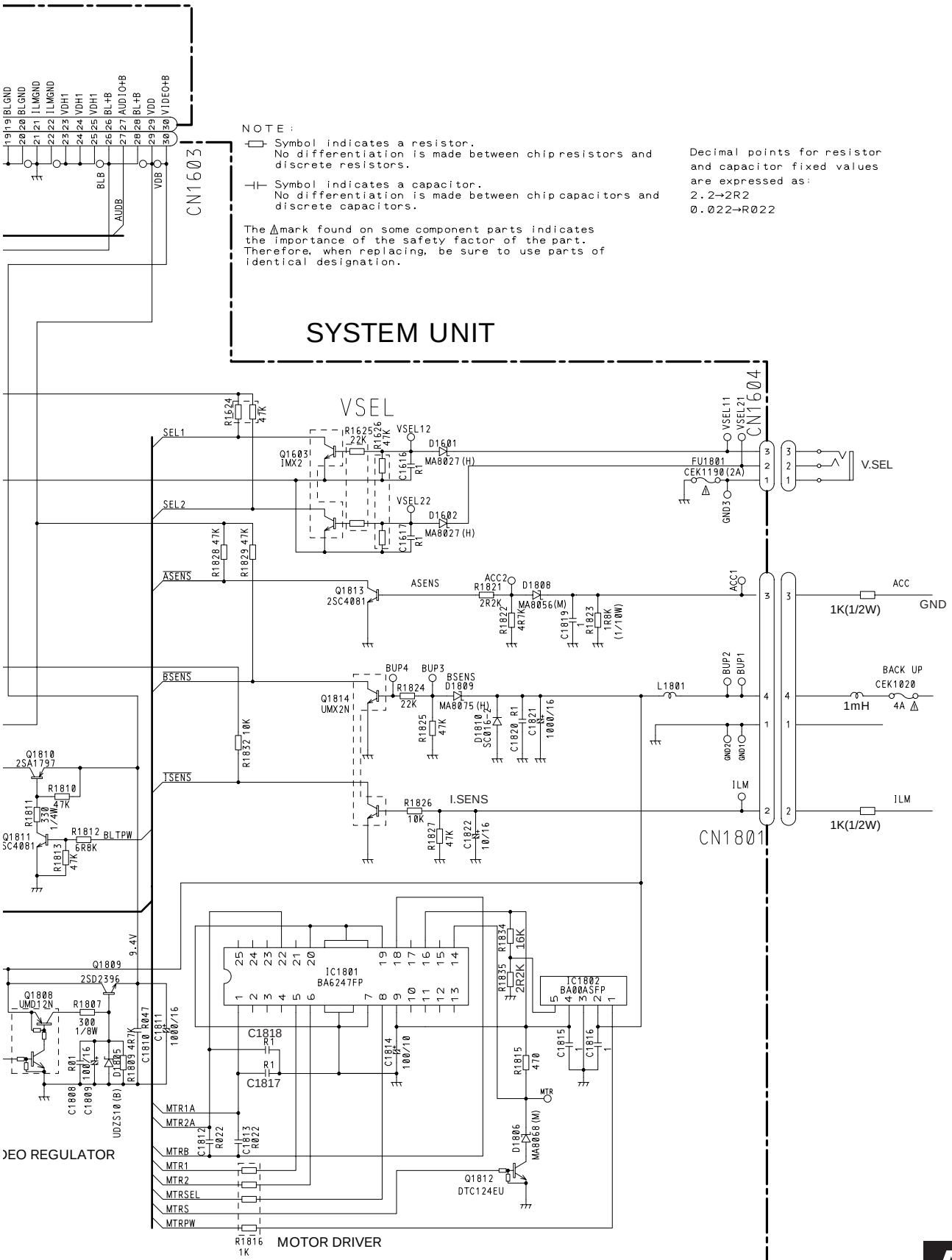



D RELAY UNIT
F LCD KEYBOARD UNIT
CN2902
CN51
CN55
CN21
LSENS
SWDVDD
ILB
ILM+B
KEY1
DILM
TO CN2604
15PIN DILM
OE
DATA
CLOCK
LCK
DATA/CLOCK/LCK
IC 24
PNA4603
HOOLB
SENSOR
WIDE
ANGLE+
ANGLE-
KEY
D30
S21~S23
Q21
DIL
Q21
EW
D0~D9
Q22
IC 21
BU2092FV
LED
CONTOLLER
LCD MODULE
LCD
LCD
BACKLIGHT
R/G/B
CSYNC
VSYNC
IC 2904
BA7071F
DIMMER
BRIGHT
VIDEO
PRH
PRV
RHD
RVD
IC 2901
TC7W34FU
IC 51
TC74VHC123AFT
HSY
VSY
MODE1
MODE2
MODE3
N/P
TINT
Q51
MODE1~MODE3/N/P
VDB
VDG
VLB
VLG
PULLSW
MTR2A
MTRB
MTR1A
ANGLE
KEY GND
VIDEO VCC
VIDEO GND
BACKLIGHT VCC
BACK LIGHT GND
ANGLE MOTOR
MOTOR+B
POSITION MOTOR
S51
PULL
SWITCH
DIO+B
BL+B
VIDEO +B
AUDIO+B
VDD
MUTE
CN2605
CN57
CN52
CN53
CN56
VR51
ANGLE SENSOR
POSITION
MOTOR
M52
ANGLE
MOTOR
M51
E ENCODER UNIT
CN1601
CN1603
B.U
Q1805
Q1816
V REGULATOR
IC 1802
BA00ASFP
MOTOR CONTROL
IC 1801
BA6247FP
Q1602
REGULATOR
AUDIOB
VIDEO+B
BACK LIGHT +B
Q1809
Q1810
BL+B
BLTPW
Q1811

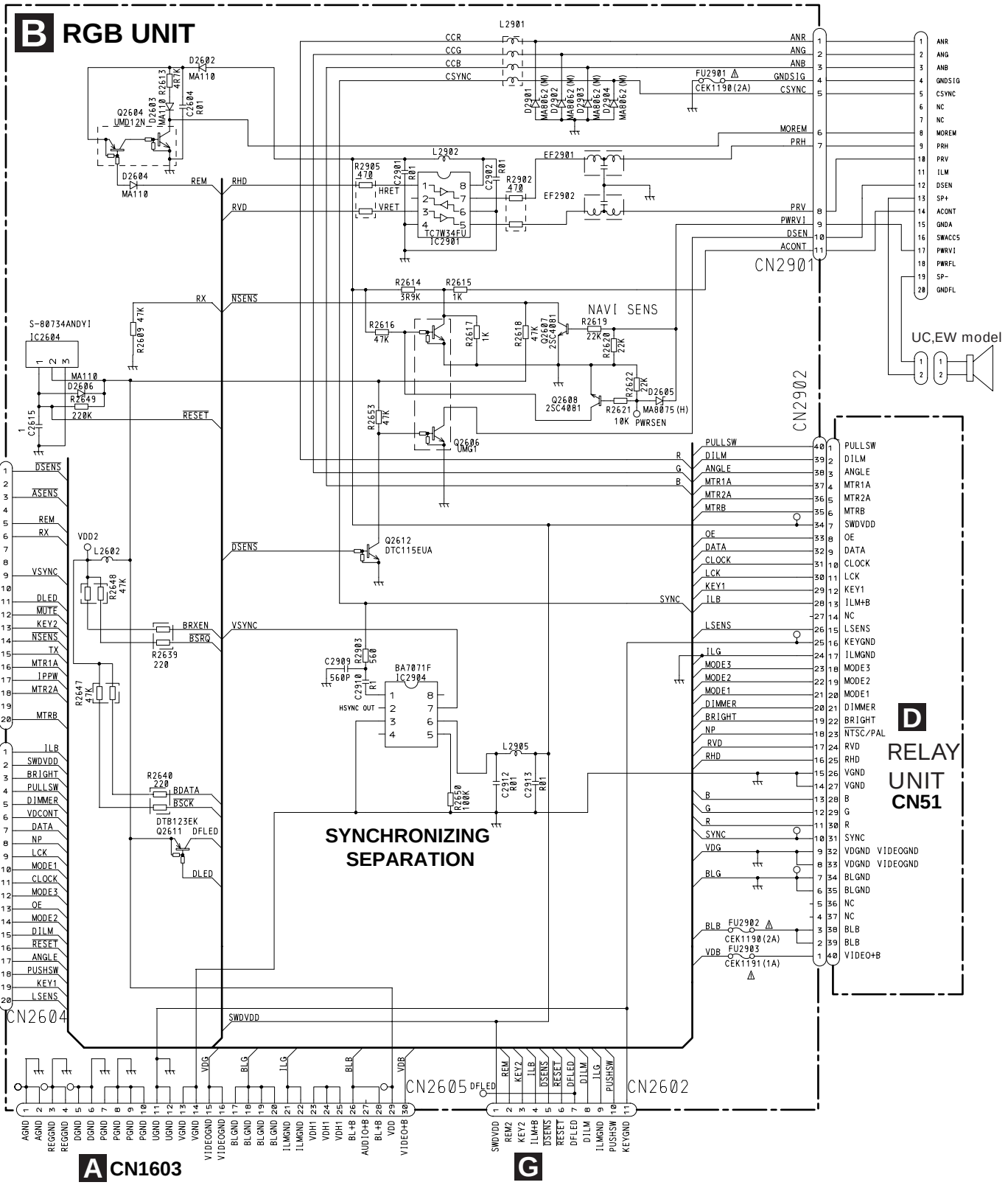
3.2 SYSTEM UNIT

Note: When ordering service parts, be sure to refer to "EXPLODED VIEWS AND PARTS LIST" or "ELECTRICAL PARTS LIST".

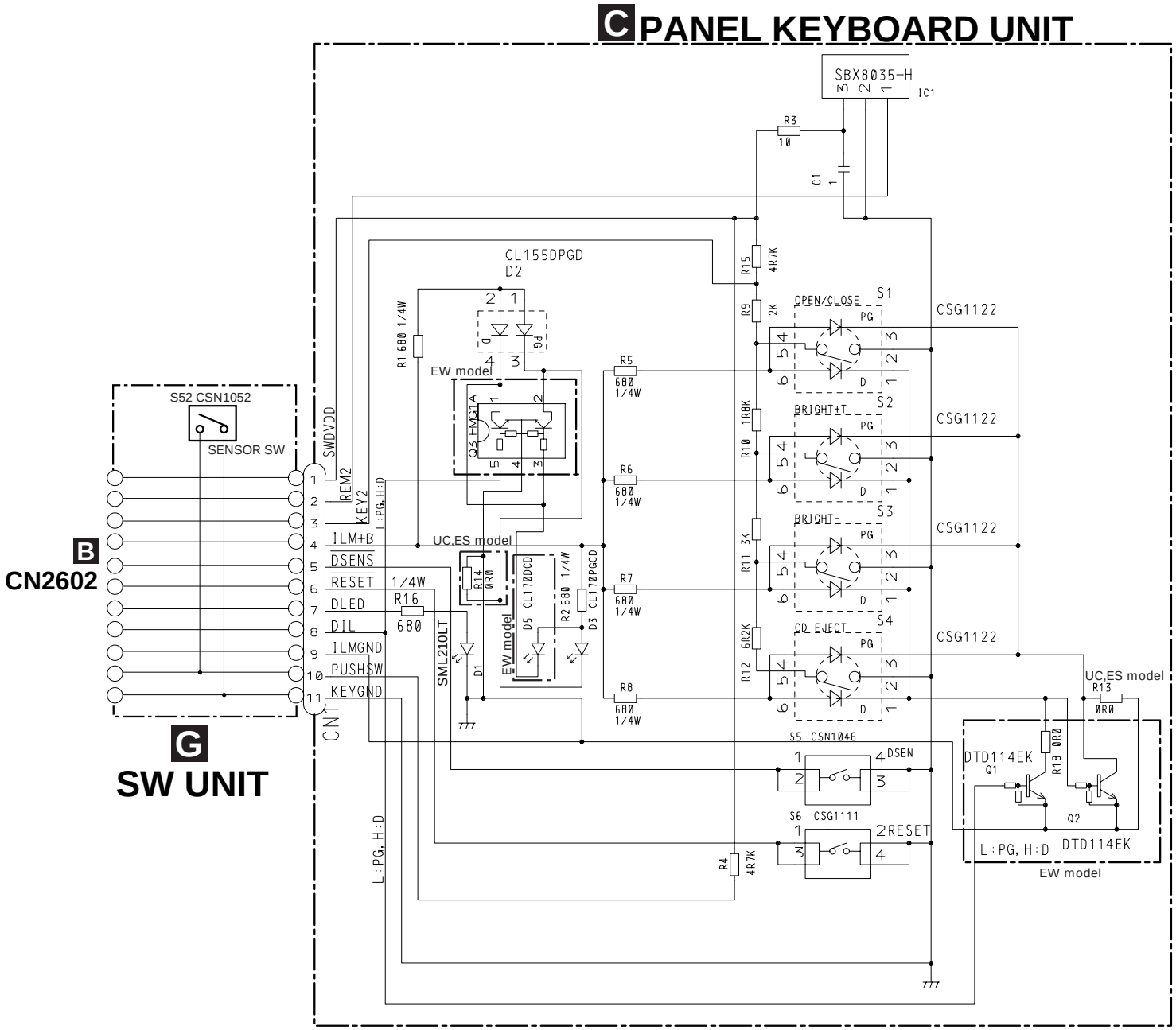



NOTE :
Symbol indicates a resistor.
No differentiation is made between chip resistors and discrete resistors.
Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.
The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
Decimal points for resistor and capacitor fixed values are expressed as:
2.2→2R2
0.022→R022
SYSTEM UNIT
CN1603
CN1604
CN1801
VSEL
V.SEL
ACC
GND
BACK UP
CEK1020
1mH
4A
ILM
1K(1/2W)
I.SENS
BLTPW
IC1801
BA6247FP
IC1802
BA00ASFP
MOTOR DRIVER
DEO REGULATOR
MTR1A
MTR2A
MTRB
MTR1
MTR2
MTRSEL
MTRS
MTRPW
SEL1
SEL2
ASENS
BSENS
TSENS
BLGND
VDH1
BL+B
AUDIO+B
VIDEO+B
VDD
BLB
AUDB
VDB
FU1801
CEK1190(2A)
L1801
Q1603 IMX2
Q1813 2SC4081
Q1814 UMX2N
Q1810 2SA1797
Q1811 2SC4081
Q1809 2SD2396
Q1808 UMD2N
Q1812 DTC124EU
D1601 MA8027(H)
D1602 MA8027(H)
D1808 MA8056(M)
D1809 MA8075(H)
D1806 MA8056(M)
D1810 SC016-Z
UDZS10(B)
9.4V

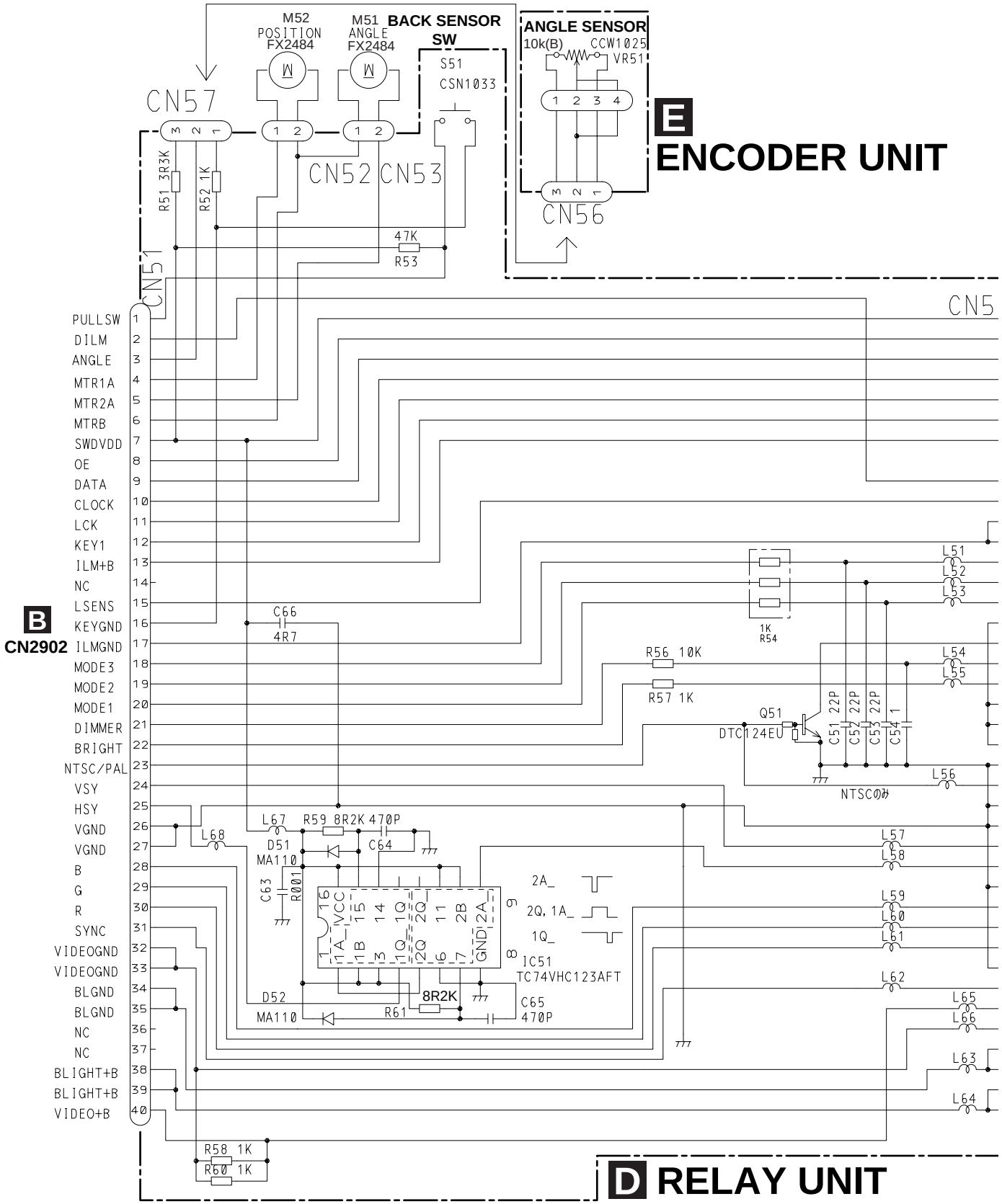
3.3 RGB UNIT

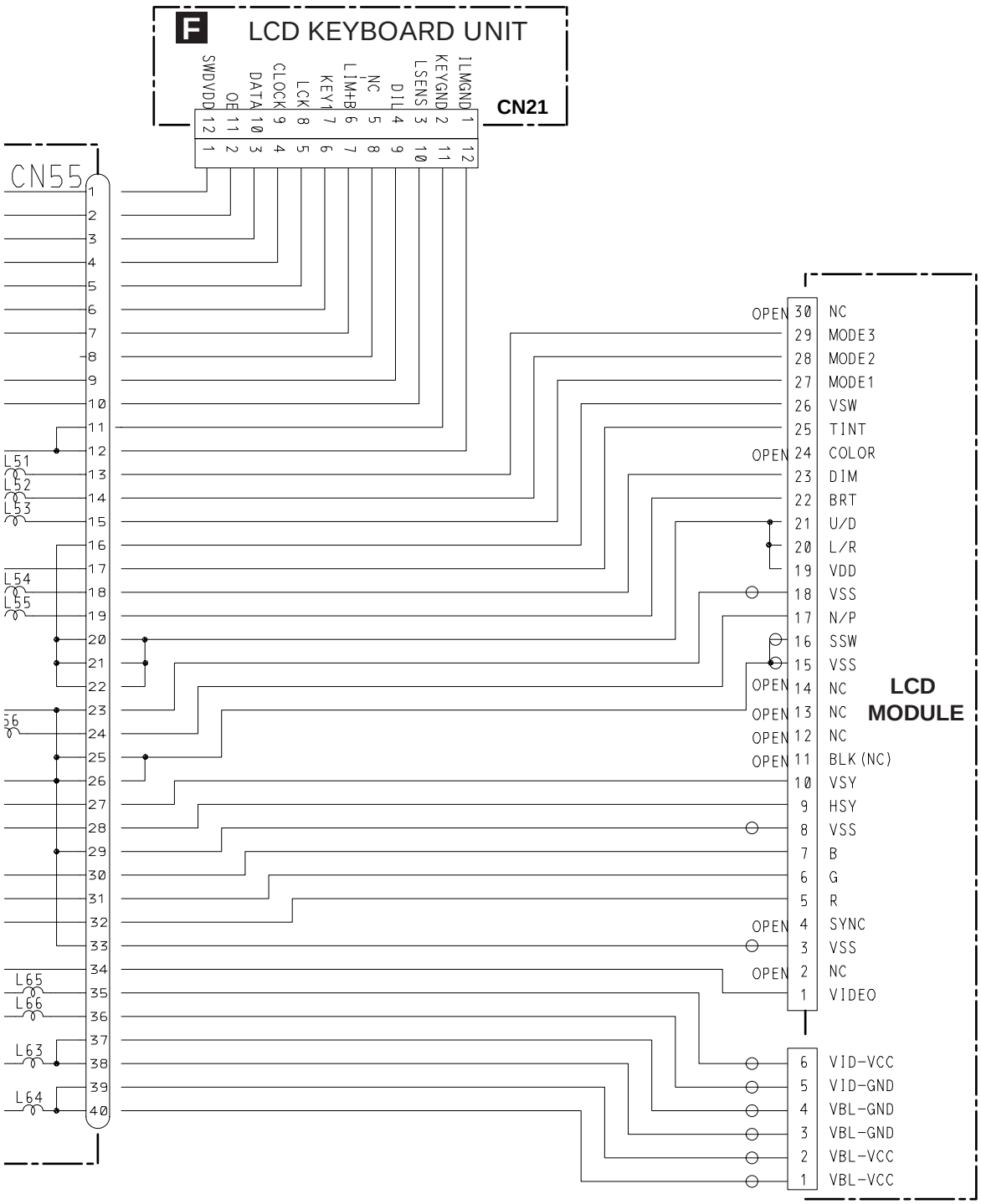

B RGB UNIT
L2901
CCR
CCG
CCB
CSYNC
ANR
ANG
ANB
GNDSIG
CSYNC
FU2901
CEK1190(2A)
D2602
MA110
Q2604
UMD12N
D2604
MA110
REM
RHD
RVD
L2902
EF2901
EF2902
HRET
VRET
TC7W34FU
IC2901
MOREM
PRH
PRV
PWRV1
DSEN
ACONT
CN2901
R2614
3R9K
R2615
1K
RX
NSENS
NAVI SENS
S-80734ANDY1
IC2604
R2616
47K
R2617
1K
R2618
47K
Q2607
2SC4081
R2619
22K
R2620
22K
R2622
22K
D2605
MA8075 (H)
PWRSEN
Q2608
2SC4081
R2621
10K
R2649
220K
RESET
C2615
R2653
47K
Q2606
UMG1
CN2902
UC,EW model
CN2603
A CN1601
DSENS
ASENS
REM
RX
VSYNC
DLED
MUTE
KEY2
NSENS
TX
MTR1A
IPPW
MTR2A
MTRB
VDD2
L2602
R2648
47K
Q2612
DTC115EUA
BRXEN
BSRQ
R2639
220
C2909
560P
R2903
560
C2910
R1
BA7071F
IC2904
HSYNC OUT
L2905
C2912
R01
C2913
R01
R2650
100K
R2640
220
BDATA
BSCK
DTB123EK
Q2611
DFLED
R2647
47K
SYNCHRONIZING
SEPARATION
SWDVDD
PULLSW
DILM
ANGLE
MTR1A
MTR2A
MTRB
SWDVDD
OE
DATA
CLOCK
LCK
KEY1
ILB
ILG
MODE3
MODE2
MODE1
DIMMER
BRIGHT
NP
RVD
RHD
VGND
VGND
B
G
R
SYNC
VDG
BLG
BLB
FU2902
CEK1190(2A)
VDB
FU2903
CEK1191(1A)
LSENS
KEYGND
ILMGND
NTSC/PAL
VIDEOGND
VIDEOGND
BLGND
BLGND
BLGND
BLGND
VIDEO+B
D RELAY UNIT CN51
A CN1602
ILM+B
SWDVDD
BRIGHT
PULLSW
DIMMER
VDCONT
DATA
NTSC/PAL
LCK
MODE1
CLOCK
MODE3
OE
MODE2
DILM
RESET
ANGLE
PUSHSW
KEY1
LSENS
CN2604
CN2605
DFLED
CN2602
A CN1603
AGND
AGND
REGGND
REGGND
DGND
DGND
PGND
PGND
PGND
PGND
UGND
UGND
VGND
VGND
VIDEOGND
VIDEOGND
BLGND
BLGND
BLGND
BLGND
ILMGND
ILMGND
VDH1
VDH1
VDH1
BL+B
BL+B
AUDIO+B
BL+B
VDD
VIDEO+B
G
SWDVDD
REM2
KEY2
ILM+B
DSENS
RESET
DFLED
DILM
ILMGND
PUSHSW
KEYGND

3.4 PANEL KEYBOARD UNIT

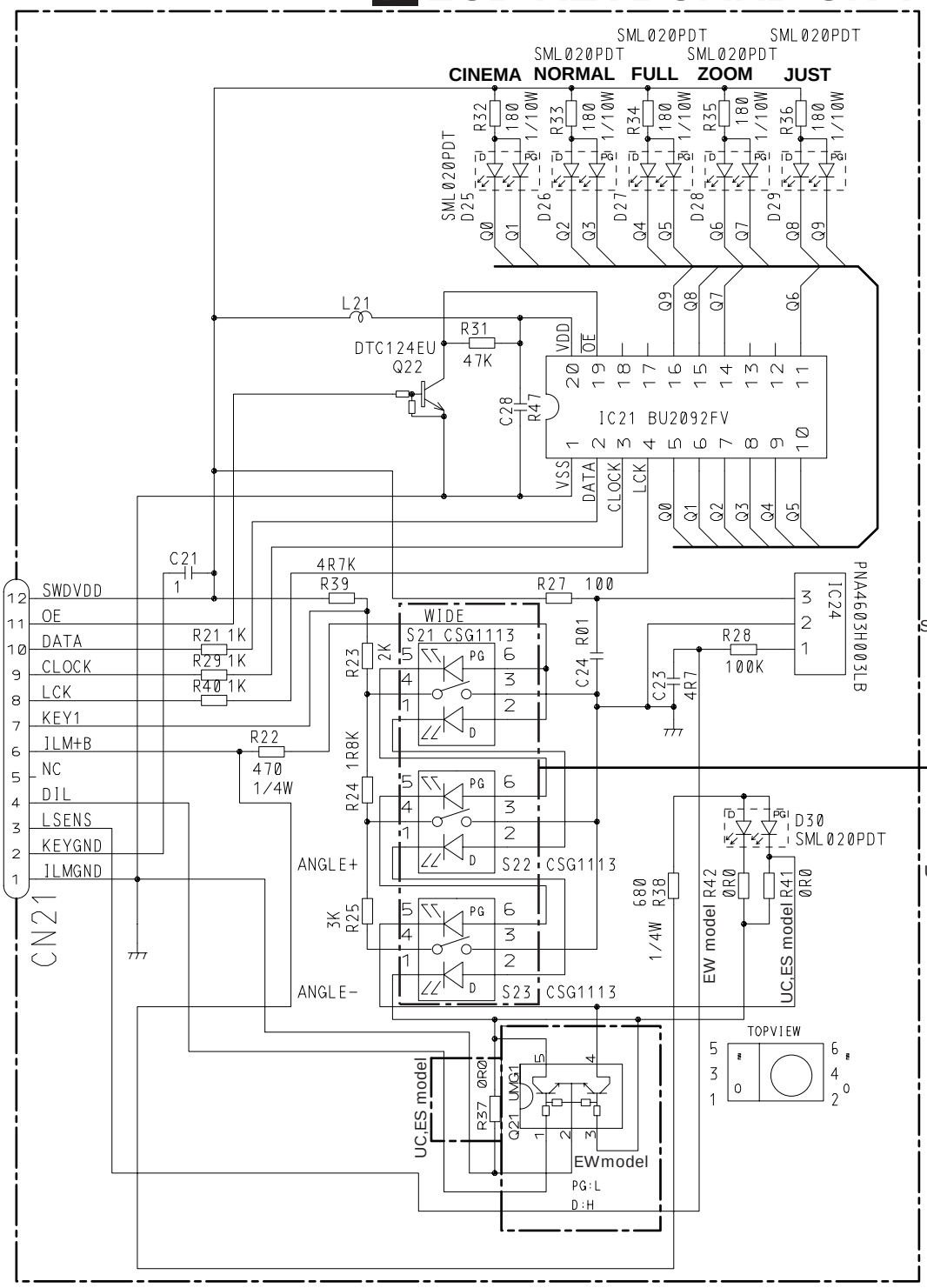


3.5 RELAY UNIT AND ENCODER UNIT



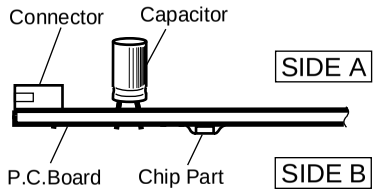

F
LCD KEYBOARD UNIT
CN21
SWDVDD 12
OE 11
DATA 10
CLOCK 9
LCK 8
KEY1 7
LIM+B 6
NC 5
DIL 4
LSENS 3
KEYGND 2
ILMGND 1
CN55
L51
L52
L53
L54
L55
L56
L63
L64
L65
L66
OPEN 30 NC
29 MODE3
28 MODE2
27 MODE1
26 VSW
25 TINT
OPEN 24 COLOR
23 DIM
22 BRT
21 U/D
20 L/R
19 VDD
18 VSS
17 N/P
16 SSW
15 VSS
OPEN 14 NC
OPEN 13 NC
OPEN 12 NC
OPEN 11 BLK(NC)
10 VSY
9 HSY
8 VSS
7 B
6 G
5 R
OPEN 4 SYNC
3 VSS
OPEN 2 NC
1 VIDEO
LCD MODULE
6 VID-VCC
5 VID-GND
4 VBL-GND
3 VBL-GND
2 VBL-VCC
1 VBL-VCC

3.6 LCD KEYBOARD UNIT



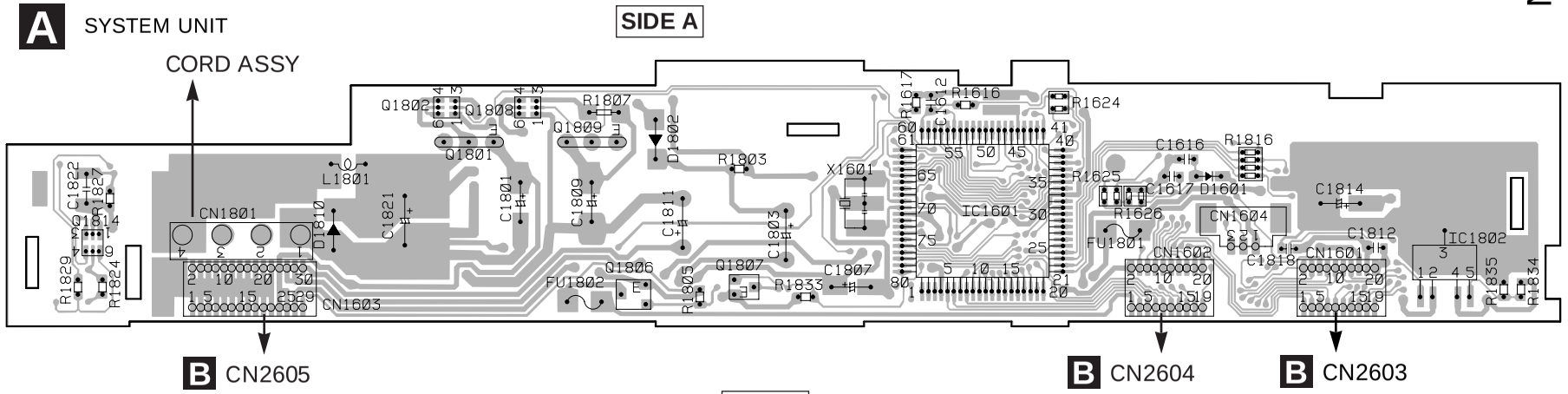
NOTE FOR PCB DIAGRAMS

1. The parts mounted on this PCB include all necessary parts for several destination.
   For further information for respective destinations, be sure to check with the schematic diagram.
2. Viewpoint of PCB diagrams

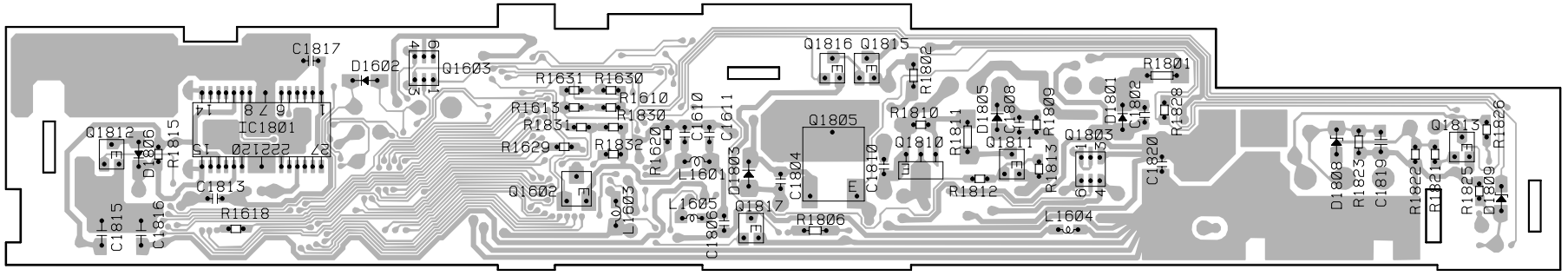


A SYSTEM UNIT

SIDE A



SIDE B



A SYSTEM UNIT

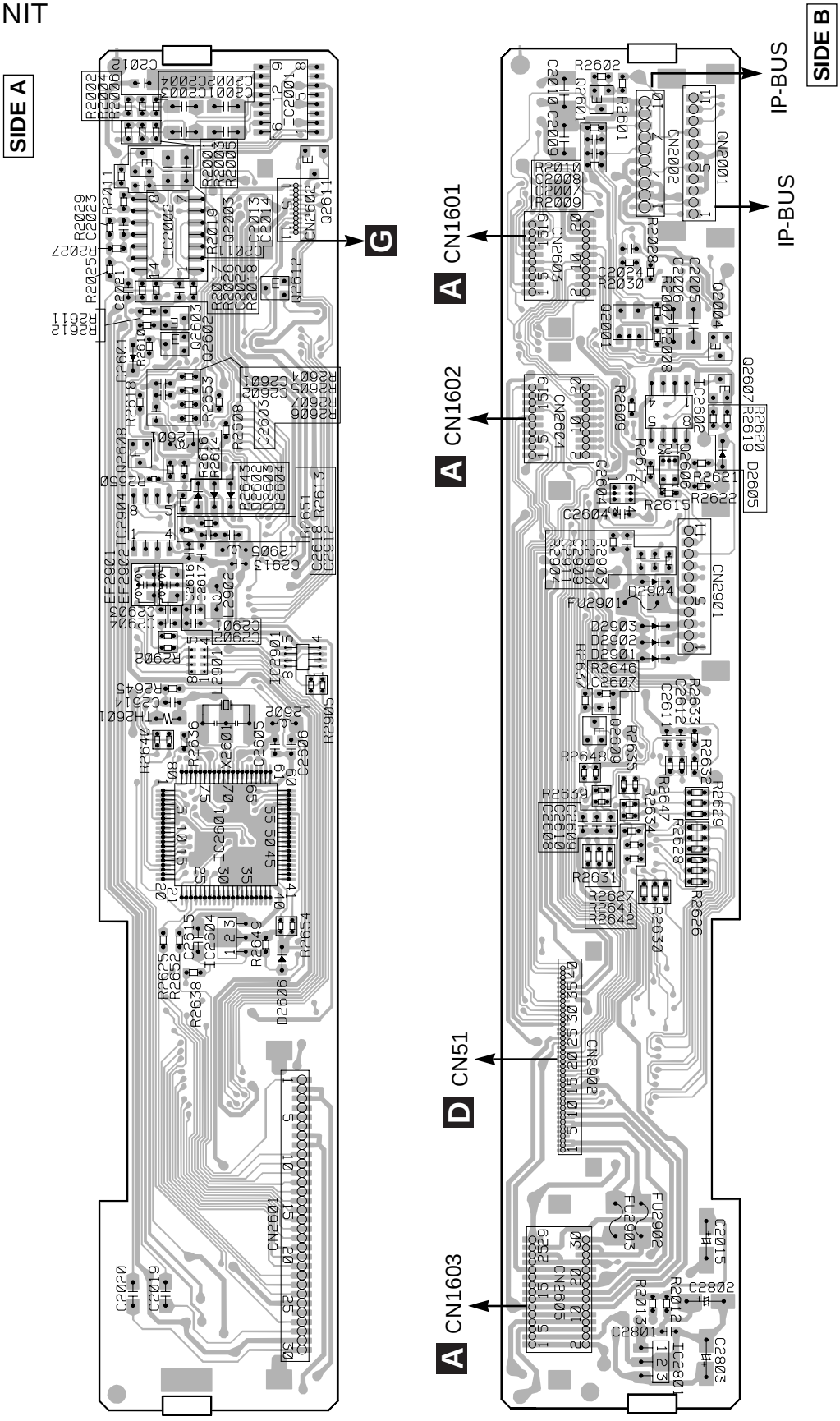
IC, Q

Q1808
Q1802
Q1809
Q1801
IC1601
Q1814
IC1802
Q1807
Q1806

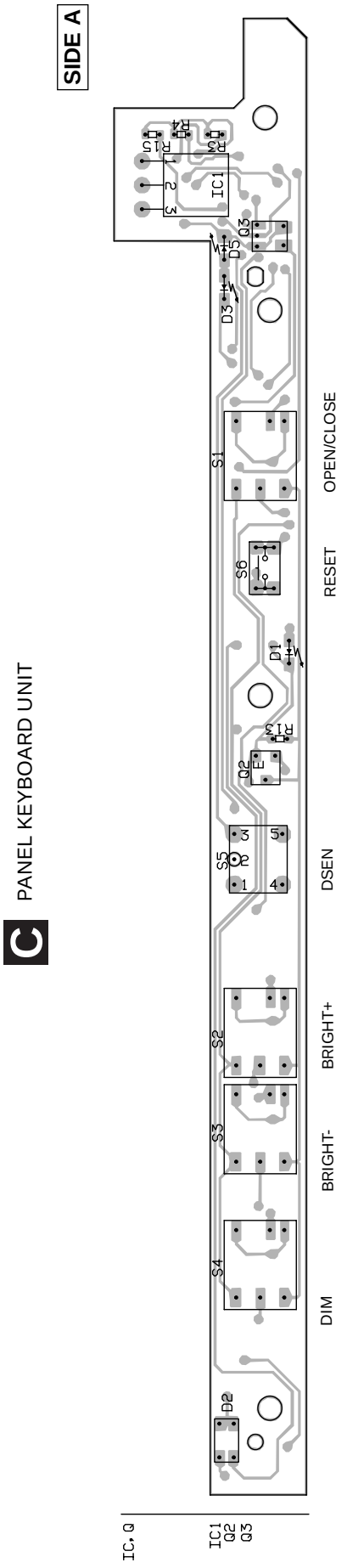
IC, Q

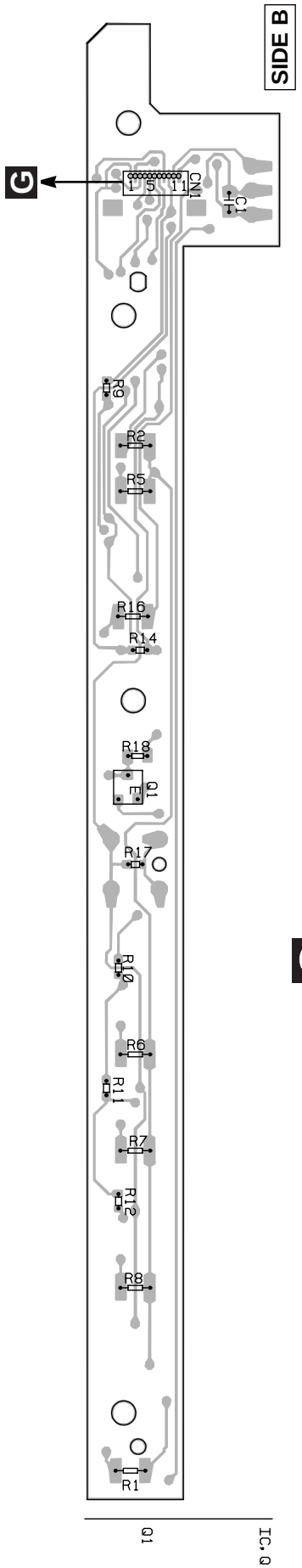
Q1816 Q1815
Q1603
Q1812 Q1805
IC1801 Q1803
Q1813
Q1810 Q1811
Q1602
Q1817

4.2 RGB UNIT

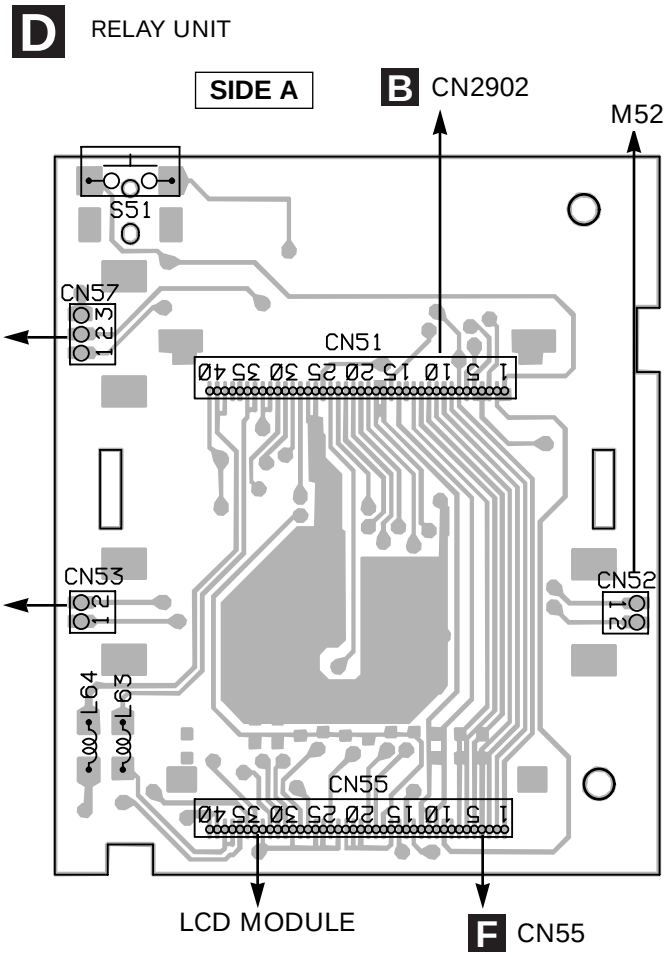

SIDE A
B RGB UNIT
G
IC, Q
IC2904 Q2608 IC2602
IC2002 Q2603
IC2601 Q2602 Q2003
IC2604
IC2901 IC2001
Q2612
Q2611
SIDE B
IP-BUS
IP-BUS
A CN1601
A CN1602
A CN1603
D CN51
IC, Q
Q2601 Q2609
Q2001 Q2604
Q2606 IC2801
Q2607
Q2004
B RGB UNIT

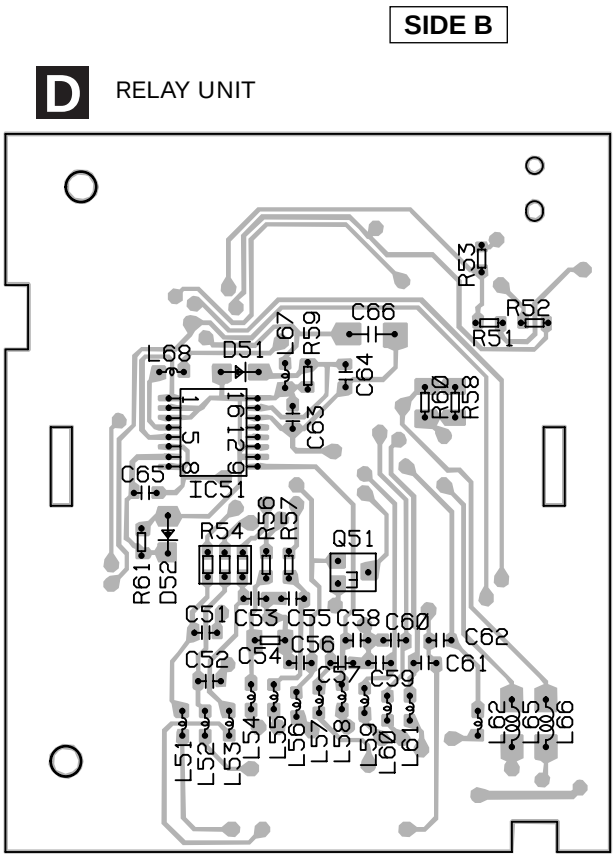
4.3 PANEL KEYBOARD UNIT



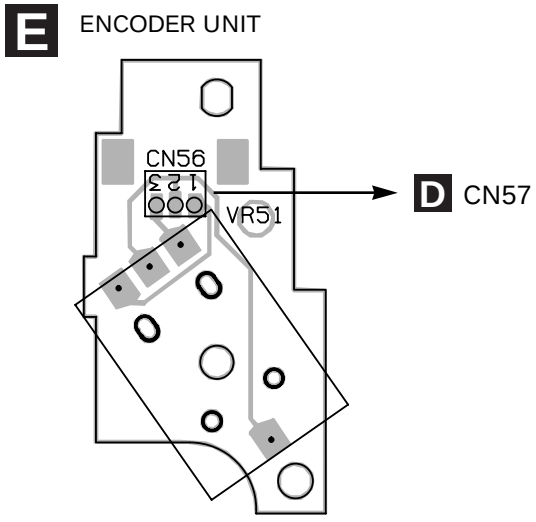


4.4 RELAY UNIT



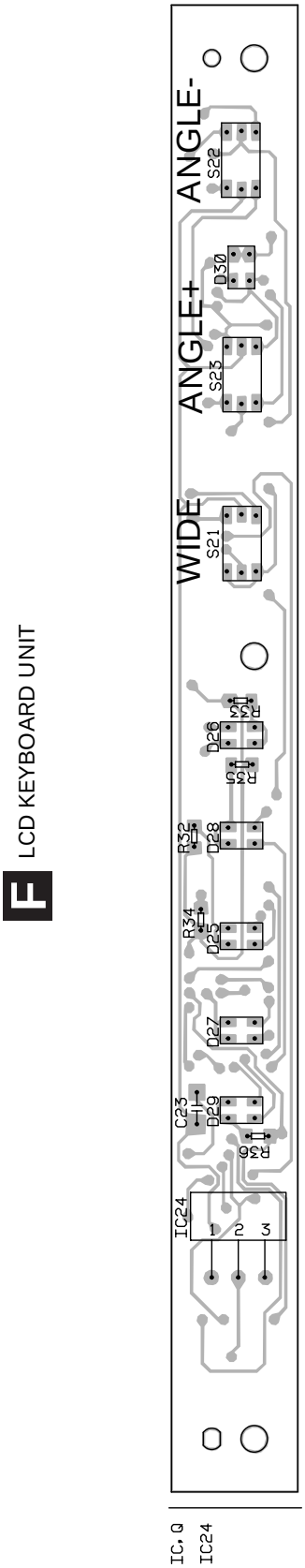


4.5 ENCODER UNIT

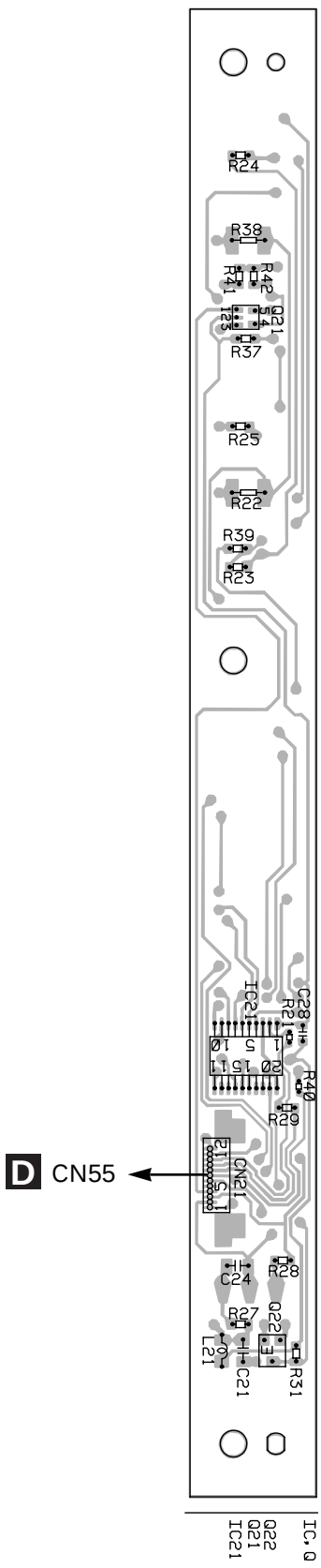


4.6 LCD KEYBOARD UNIT

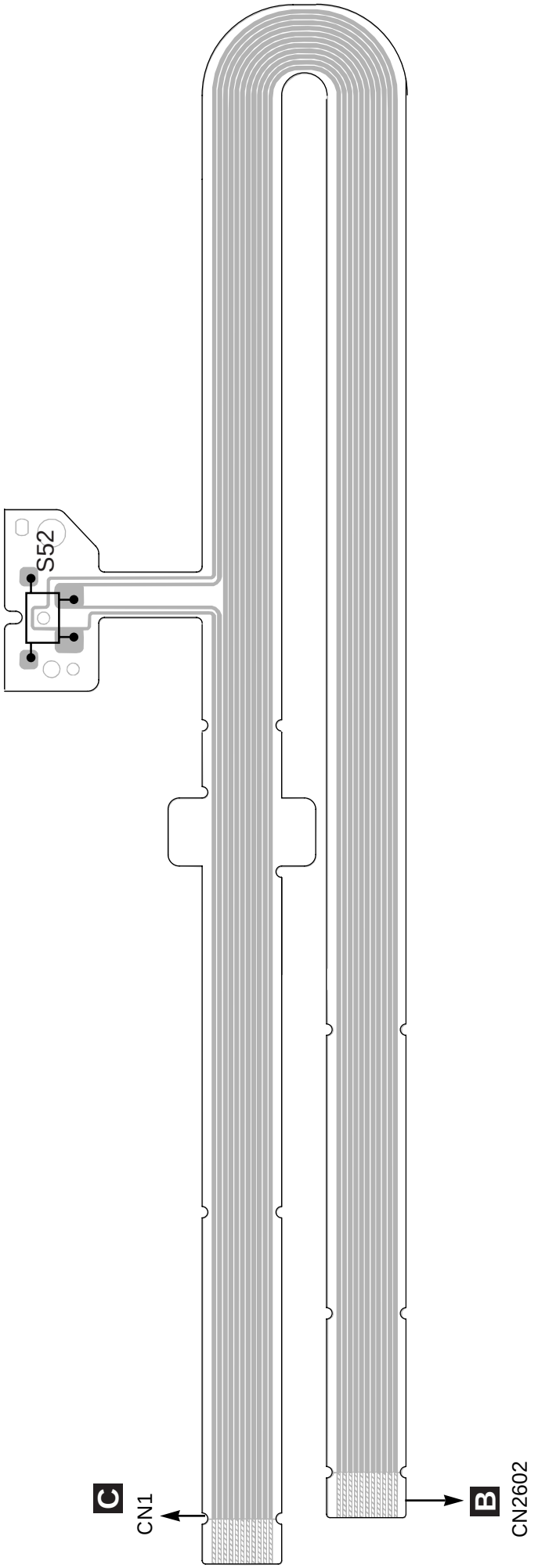
SIDE A



SIDE B



4.7 SW UNIT



5. ELECTRICAL PARTS LIST

NOTE:

- Parts whose parts numbers are omitted are subject to being not supplied.
- The part numbers shown below indicate chip components.

Chip Resistor

RS1/○S○○○J,RS1/○○S○○○J

Chip Capacitor (except for CQS.....)

CKS....., CCS....., CSZS.....

=====Circuit Symbol and No.		===Part Name	Part No.
B	Unit Number	: CWM6435	
	Unit Name	: RGB Unit	
MISCELLANEOUS			
IC	2604	IC	S-80734ANDYI
IC	2901	IC	TC7W34FU
IC	2904	IC	BA7071F
Q	2604	Transistor	UMD12N
Q	2606	Transistor	UMG1
Q	2607	Transistor	2SC4081
Q	2608	Transistor	2SC4081
Q	2611	Transistor	DTB123EK
Q	2612	Transistor	DTC115EUA
D	2602	Diode	MA110
D	2603	Diode	MA110
D	2604	Diode	MA110
D	2605	Diode	MA8075(H)
D	2606	Diode	MA110
D	2901	Diode	MA8062(M)
D	2902	Diode	MA8062(M)
D	2903	Diode	MA8062(M)
D	2904	Diode	MA8062(M)
L	2602	Inductor	CTF1399
L	2901	Inductor Ary	CTF1421
L	2902	Inductor	LCTB2R2K2125
L	2905	Inductor	LCTB2R2K2125
FU	2901	Micro-Fuse 2A	CEK1190
FU	2902	Micro-Fuse 2A	CEK1190
FU	2903	Micro-Fuse 1A	CEK1191
EF	2901	EMI-Filter	CCG1067
EF	2902	EMI-Filter	CCG1067
RESISTORS			
R	2609		RS1/16S473J
R	2613		RS1/16S472J
R	2614		RS1/16S392J
R	2615		RS1/16S102J
R	2616		RS1/16S473J
R	2617		RS1/16S102J
R	2618		RS1/16S473J
R	2619		RS1/16S223J
R	2620		RS1/16S223J
R	2621		RS1/16S103J
R	2622		RS1/16S223J
R	2639		RA2CQ221J
R	2640		RA2CQ221J
R	2647		RA2CQ473J
R	2648		RA2CQ473J
R	2649		RS1/16S224J
R	2650		RS1/16SS1003D
R	2653		RS1/16S473J
R	2902		RA2CQ471J
R	2903		RS1/16S561J

=====Circuit Symbol and No.		===Part Name	Part No.
R	2905		RA2CQ471J
CAPACITORS			
C	2604		CKSRYB103K50
C	2615		CKSQYB105K10
C	2901		CKSRYB103K50
C	2902		CKSRYB103K50
C	2909		CKSRYB561K50
C	2910		CKSRYB104K16
C	2912		CKSRYB103K50
C	2913		CKSRYB103K50
C	Unit Number	: CWM6439(UC,ES model) CWM6438(EW model)	
	Unit Name	: Panel Keyboard Unit	
MISCELLANEOUS			
IC	1	IC	SBX8035-H
Q	1	Transistor(EW model)	DTD114EK
Q	2	Transistor(EW model)	DTD114EK
Q	3	Transistor(EW model)	FMG1A
D	1	LED	SML210LT
D	2	LED	CL155DPGD
D	3	LED	CL170PGCD
D	5	LED(EWmodel)	CL170DCD
S	1	Push Switch	CSG1122
S	2	Push Switch	CSG1122
S	3	Push Switch	CSG1122
S	4	Push Switch	CSG1122
S	5	Spring Switch	CSN1046
S	6	Push Switch	CSG1111
RESISTORS			
R	1		RS1/4S681J
R	2		RS1/4S681J
R	3		RS1/16S100J
R	4		RS1/16S472J
R	5		RS1/4S681J
R	6		RS1/4S681J
R	7		RS1/4S681J
R	8		RS1/4S681J
R	9		RS1/16S202J
R	10		RS1/16S182J
R	11		RS1/16S302J
R	12		RS1/16S622J
R	13	(UC,ES model)	RS1/16S0R0J
R	14	(UC,ES model)	RS1/16S0R0J
R	15		RS1/16S472J
R	16		RS1/4S681J
R	18	(EW model)	RS1/10S0R0J
CAPACITORS			
C	1		CKSQYB105K10

F Unit Number : CWM6426(UC,ES model)
CWM6427(EW model)
Unit Name : LCD Keyboard Unit

MISCELLANEOUS

IC	21	IC	BU2092FV
IC	24	IC	PNA4603H00LB
Q	21	Transistor(EW model)	UMG1
Q	22	Transistor	DTC124EU
D	25	LED	SML020PDT
D	26	LED	SML020PDT
D	27	LED	SML020PDT
D	28	LED	SML020PDT
D	29	LED	SML020PDT
D	30	LED	SML020PDT
L	21	Inductor	LCTB2R2K2125
S	21	Push Switch(UC,ES model)	CSG1112
S	21	Push Switch(EW model)	CSG1113
S	22	Push Switch(UC,ES model)	CSG1112
S	22	Push Switch(EW model)	CSG1113
S	23	Push Switch(UC,ES model)	CSG1112
S	23	Push Switch(EW model)	CSG1113

RESISTORS

R	21		RS1/16SS102J
R	22		RS1/4S471J
R	23		RS1/16S202J
R	24		RS1/16S182J
R	25		RS1/16S302J
R	27		RS1/16S101J
R	28		RS1/16S104J
R	29		RS1/16S102J
R	31		RS1/16S473J
R	32		RS1/10S181J
R	33		RS1/10S181J
R	34		RS1/10S181J
R	35		RS1/10S181J
R	36		RS1/10S181J
R	37	(UC,ES model)	RS1/16S0R0J
R	38		RS1/4S681J
R	39		RS1/16S472J
R	40		RS1/16SS102J
R	41	(UC,ES model)	RS1/16S0R0J
R	47	(EW model)	RS1/16S0R0J

CAPACITORS

C	21	CKSQYB105K10
C	23	CKSYB475K10
C	24	CKSQYB103K50
C	28	CKSRYB474K10

D Unit Number : CWM6425
Unit Name : Relay Unit

MISCELLANEOUS

IC	51	IC	TC74VHC123AFT
Q	51	Transistor	DTC124EU
D	51	Diode	MA110
D	52	Diode	MA110
L	51	Inductor	CTF1379
L	52	Inductor	CTF1379
L	53	Inductor	CTF1379
L	54	Inductor	CTF1379
L	55	Inductor	CTF1379
L	56	Inductor	CTF1379
L	57	Inductor	CTF1379
L	58	Inductor	CTF1379
L	59	Inductor	CTF1306
L	60	Inductor	CTF1306
L	61	Inductor	CTF1306
L	62	Inductor	CTF1379
L	63	Inductor	CTF1488
L	64	Inductor	CTF1488
L	65	Inductor	CTF1488
L	66	Inductor	CTF1488
L	67	Inductor	CTF1379
L	68	Inductor	CTF1379
S	51	Spring Switch	CSN1033

RESISTORS

R	51	RS1/16S332J
R	52	RS1/16S102J
R	53	RS1/16S473J
R	54	RA3C102J
R	56	RS1/16S103J
R	57	RS1/16S102J
R	58	RS1/10S102J
R	59	RS1/16S822J
R	60	RS1/10S102J
R	61	RS1/16S822J

CAPACITORS

C	51	CCSRCH220J50
C	52	CCSRCH220J50
C	53	CCSRCH220J50
C	54	CKSQYB105K10
C	63	CKSRYB102K50
C	64	CKSRYB471K50
C	65	CCSRCH471J50
C	66	CKSYB475K10

A Unit Number : CWM6433
Unit Name : System Unit

MISCELLANEOUS

IC	1601	IC	PE5038A
IC	1801	IC	BA6247FP
IC	1802	IC	BA00ASFP
Q	1602	Transistor	DTB122JK
Q	1603	Transistor	IMX2
Q	1805	Transistor	2SD1760F5
Q	1806	Transistor	2SA1036K
Q	1807	Transistor	2SC4081
Q	1808	Transistor	UMD12N
Q	1809	Transistor	2SD2396
Q	1810	Transistor	2SA1797
Q	1811	Transistor	2SC4081
Q	1812	Transistor	DTC124EU
Q	1813	Transistor	2SC4081
Q	1814	Transistor	UMX2N
Q	1815	Transistor	DTA114EU
Q	1816	Transistor	DTC124EU
D	1601	Diode	MA8027(H)
D	1602	Diode	MA8027(H)
D	1802	Diode	SC016-2
D	1803	Diode	UDZS5R6(B)
D	1805	Diode	UDZS10(B)
D	1806	Diode	MA8068(M)
D	1808	Diode	MA8056(M)
D	1809	Diode	MA8075(H)
D	1810	Diode	SC016-2
L	1601	Inductor	CTF1399
L	1603	Inductor	CTF1399
L	1604	Inductor	CTF1399
L	1605	Inductor	CTF1399

=====Circuit Symbol and No.	===	Part Name	Part No.
L	1801	Inductor	CTF1487
X	1601	Radiator 6.290MHz	CSS1451
FU	1801	Micro-Fuse 2A	CEK1190
FU	1802	Micro-Fuse 400mA	CEK1184

RESISTORS

R	1613		RS1/16S473J
R	1616		RS1/16S102J
R	1618		RS1/16S102J
R	1620		RS1/16S473J
R	1624		RA2CQ473J
R	1625		RA2CQ223J
R	1626		RA2CQ473J
R	1629		RS1/16S103J
R	1630		RS1/16S473J
R	1631		RS1/16S473J
R	1802		RS1/10S911J
R	1803		RS1/16S822J
R	1805		RS1/16S473J
R	1806		RS1/10S272J
R	1807		RS1/8S301J
R	1809		RS1/16S472J
R	1810		RS1/16S473J
R	1811		RS1/4S331J
R	1812		RS1/16S682J
R	1813		RS1/16S473J
R	1815		RS1/16S471J
R	1816		RA4C102J
R	1821		RS1/16S223J
R	1822		RS1/16S472J
R	1823		RS1/10S182J
R	1824		RS1/16S223J
R	1825		RS1/16S473J
R	1826		RS1/16S103J
R	1827		RS1/16S473J
R	1828		RS1/16S473J
R	1829		RS1/16S473J
R	1831		RS1/16S473J
R	1832		RS1/16S103J
R	1833		RS1/16S474J
R	1834		RS1/16S163J
R	1835		RS1/16S222J

=====Circuit Symbol and No.	===	Part Name	Part No.

CAPACITORS

C	1610		CKSRYB473K16
C	1611		CKSRYB473K16
C	1612		CKSRYB102K50
C	1616		CKSRYB104K16
C	1617		CKSRYB104K16
C	1803		CEHAT102M16
C	1804		CKSRYB103K50
C	1806		CKSRYB103K50
C	1807		CEV220M6R3
C	1808		CKSRYB103K50
C	1809	100µ/16V	CCH1228
C	1810		CKSRYB473K16
C	1811		CEHAT102M16
C	1812		CKSRYB223K25
C	1813		CKSRYB223K25
C	1814		CEV101M10
C	1815		CKSQYB105K16
C	1816		CKSQYB105K16
C	1817		CKSRYB104K16
C	1818		CKSRYB104K16
C	1819		CKSQYB105K16
C	1820		CKSRYB104K16
C	1821		CEHAT102M16
C	1822		CEH100M16

E Unit Number : CWM6587
Unit Name : Encoder Unit

VR	51	Volume 10kΩ(B)	CCW1025

G Unit Number :
Unit Name : SW Unit

S	52	Switch (SENSOR)	CSN1052

Miscellaneous Parts List

M	51	Motor(ANGLE)	FX2484
M	52	Motor(POSITION)	FX2484

6. ADJUSTMENT

There is no information to be shown in this chapter

7. GENERAL INFORMATION

7.1 DISASSEMBLY

● Removing the Detach Grille Assy (Fig.1)

1. Remove the detach grille assy.

● Removing the Grille Assy (Fig.1)

1. Remove the two screws.
2. Disengage the stopper eight of the grille assy.
3. Disconnect the connector.

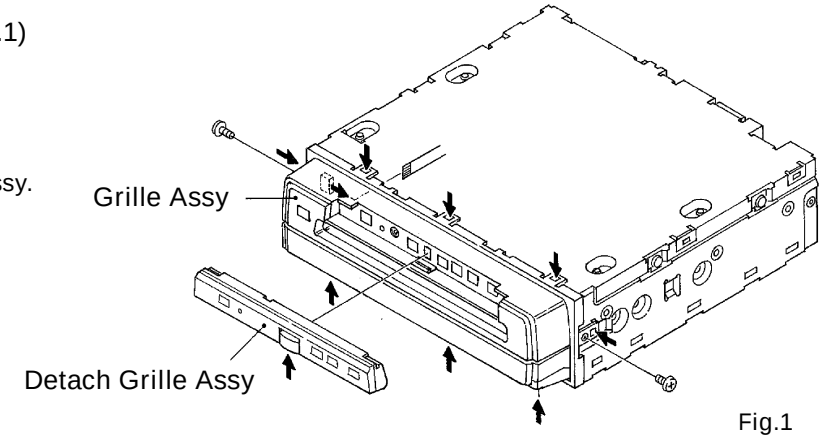


Fig.1

● Removing the Display Assy (Fig.2)

1. Remove the five screws.
2. Remove the holder.
3. Remove the case.
4. Disconnect the connector.
5. Pull out the display assy.

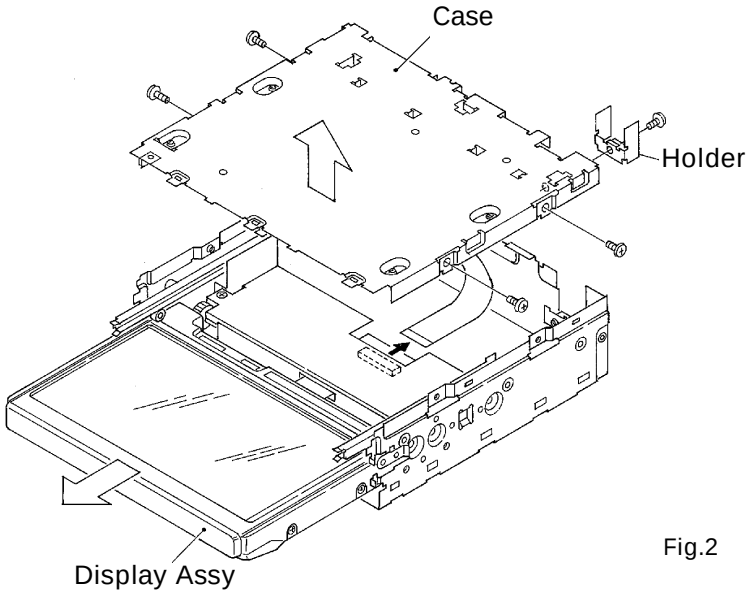


Fig.2

● Removing the RGB Unit (Fig.3)

1. Remove the solder at the 2 points marked with Arrow X inthe figure.
2. Straighten the two tabs indicated by Arrow V.
3. Remove the screws A.
4. Disconnect the three connectors indicated by Arrow Z.
5. Disconnect the connector B , the connector C , the connector D and the connector E.
6. Remove the RGB unit.

● Removing the System Unit (Fig.3)

1. Remove the screw F.
2. Straighten the three tabs indicated by Arrow G.
3. Remove the system unit.

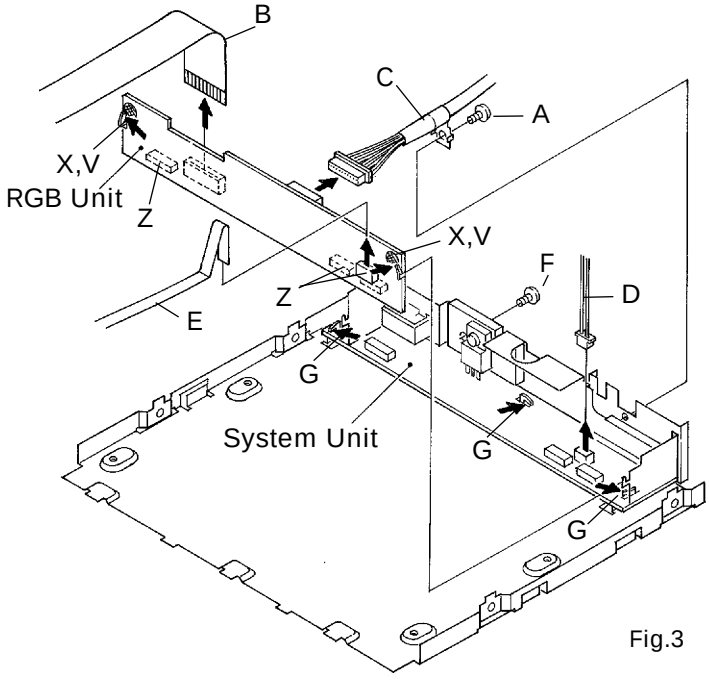


Fig.3

● Removing the Case (Fig.4)

1. Remove the four screws.
2. Remove the case.

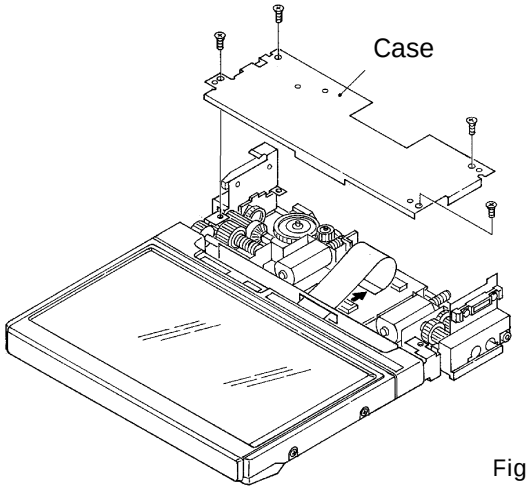


Fig.4

● Removing the Case (Fig.5)

1. Remove the four screws A.
2. Remove the two screws C.
3. Remove the case.
4. Remove the six screws B.

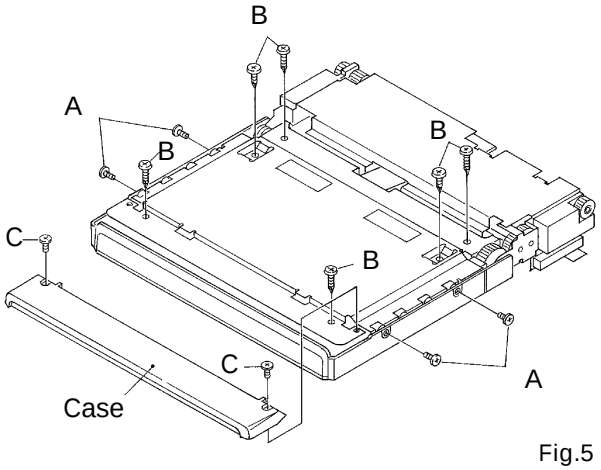


Fig.5

● Removing the Relay Unit (Fig.6)

1. Remove the connector B , connector C and connector D.
2. Straighten the two tabs indicated by Arrow (I).
3. Remove the relay unit.

● Removing the Angle Motor Section (Fig.6)

1. Remove the screw E and the screw F.
2. Remove the encoder unit and the holder.
3. Remove the screw H and the two screws G.
4. Remove the angle motor section.

● How to installing the Encoder Unit (Fig.6-1)

1. When mounting the gear, install it so that the A section faces in the direction shown in the Fig.6-1.

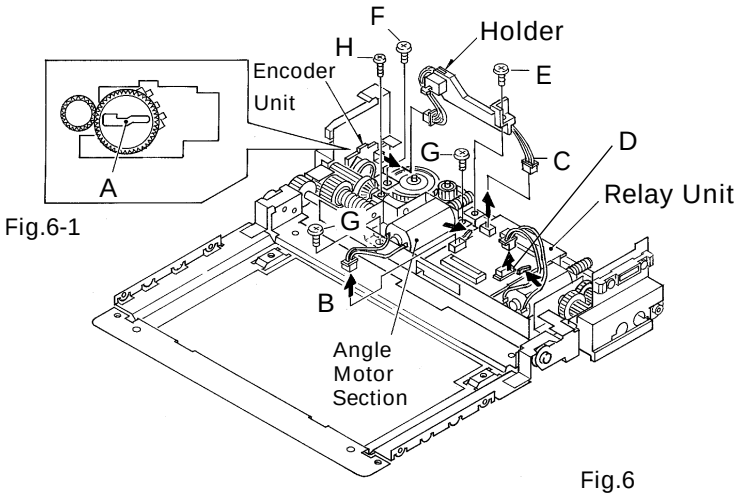


Fig.6-1

Fig.6

● Removing the Position Motor Section (Fig.7)

1. Loosen the two screws A (after completing the steps 1 to 3 of "Removing the Relay Unit").
2. Remove the position motor section.

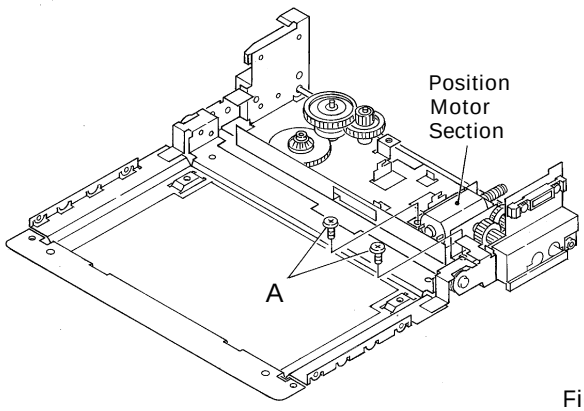


Fig.7

● Removing the LCD Keyboard Unit (Fig.8)

1. Remove the screw.
2. Remove the holder.
3. Remove the connector and the LCD keyboard unit.

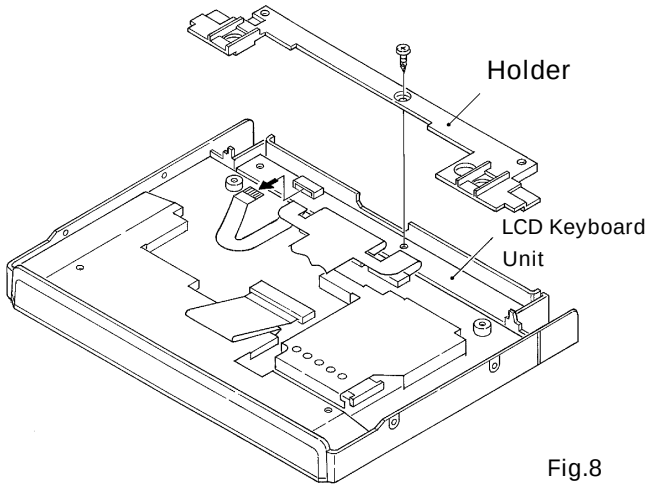


Fig.8

● Cautions on assembling (Fig.9)

1. When installing the display assy in the case, use the reference scale on the surface of the case to set the display assy properly (not slantigly), as shown in the Fig.17.

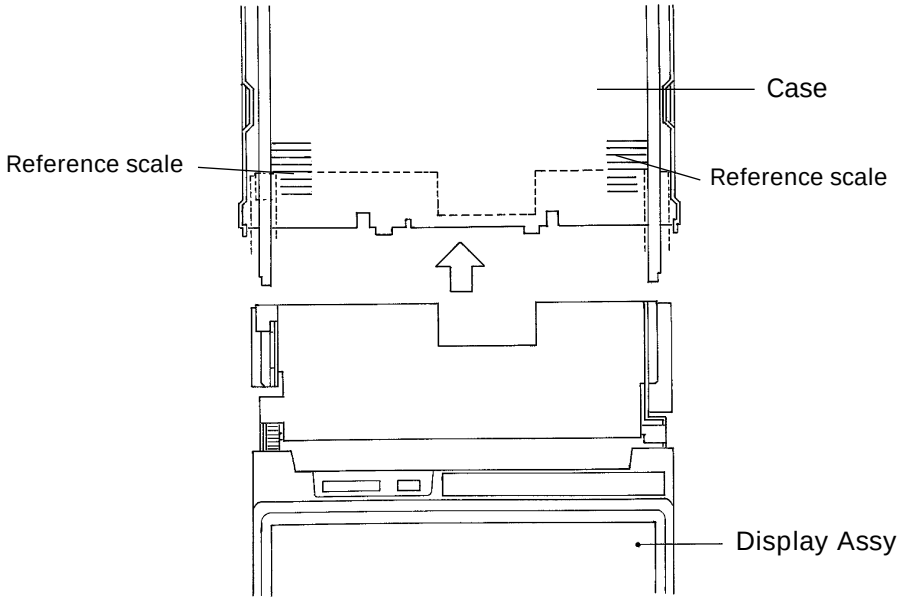
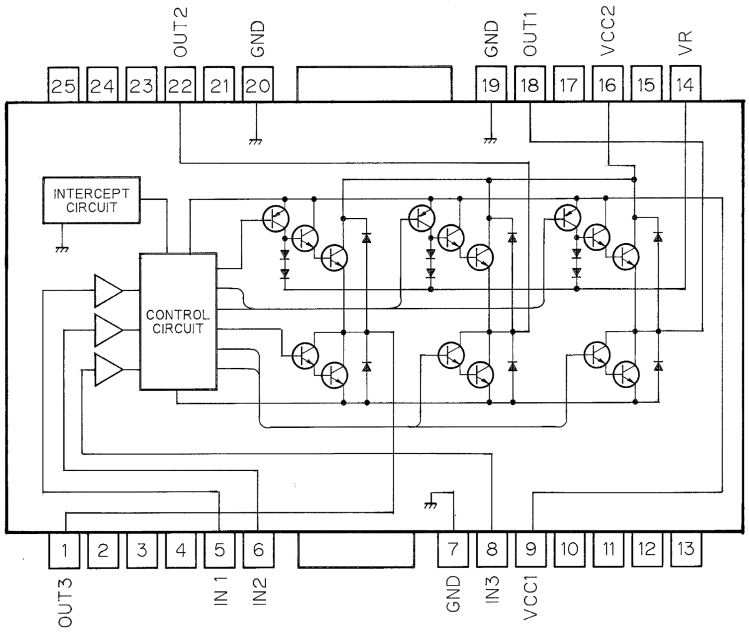


Fig.9

7.2 IC

BA6247FP



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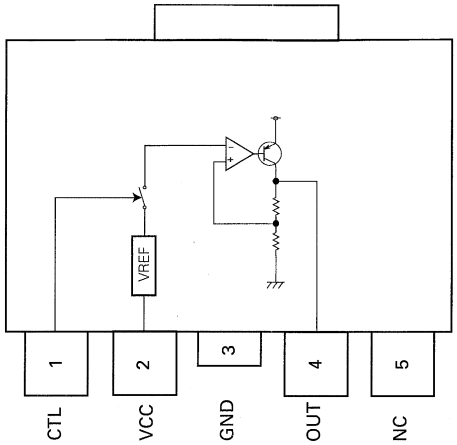

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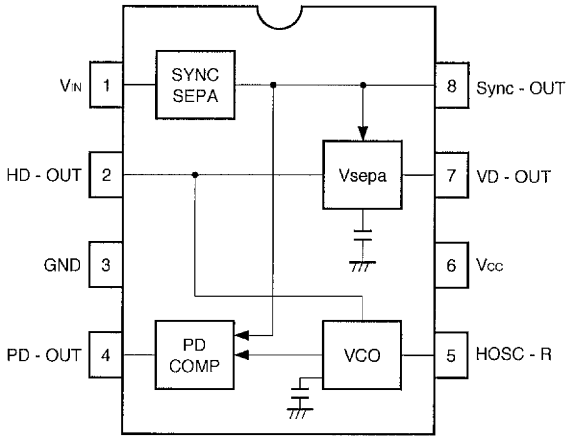

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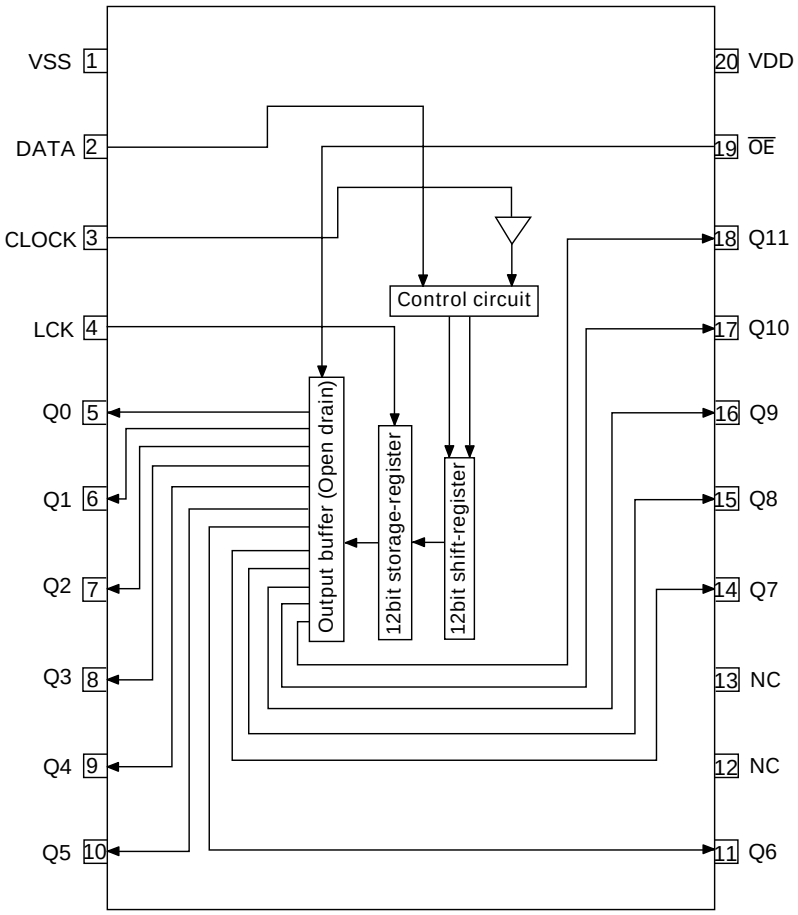
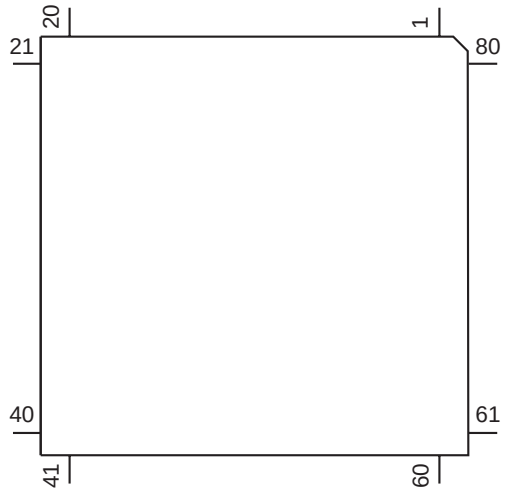


● Pin Functions (PE5038A)

Pin No.	Pin Name	I/O	Format	Function and Operation
1-3	NC			Not used
4	AVSS			GND
5	BRIGHT		C	Bright control output
6	DIMMER		C	Dimmer control output
7	AVREF1			D/A converter reference voltage (Connects to VDD)
8	LEDDT	O	C	Data output for the WIDE MODE indicating LED driver
9	LEDCLK	O	C	Clock output for the WIDE MODE indicating LED driver
10	LEDLCK	O	C	Lock output for the WIDE MODE indicating LED driver
11	BSI(TSI)	I	C	P-BUS data input
12	BSO(TSO)	I/O	C	P-BUS data output
13	BSCK(TSCK)	I/O	C	P-BUS clock output
14	BSRQ	I	C	P-BUS communication command input
15	BRXEN	I/O	C	P-BUS communication
16	BRST	O	C	P-BUS bus-resetting output
17	LEDOE	O	C	LED activation authorizing output for the WIDE MODE indicating LED driver
18	DUALILM	O	C	Dual illumination color setting output ($\overline{\text{GREEN}}$/AMBER)
19	NC			Not used
20	MTRS	O	C	Storage motor speed adjusting output
21	MTRSEL	O	C	Storage motor rotating direction designating output
22	MTR1	O	C	Storage motor changeover/brake-mode designating output 1
23	MTR2	O	C	Storage motor changeover/brake-mode designating output 2
24	MTRPW	O	C	Flap motor driver power switch output
25	ASEL	O	C	Audio select output ($\overline{\text{IP-BUS}}$/SCD)
26-29	NC			Not used
30	$\overline{\text{PUSHSW}}$	I	C	Monitor pushing-out end sensing switch input
31	$\overline{\text{PULLSW}}$	I	C	Monitor pulling back end sensing switch input
32	NC			Not used
33	VSS			GND
34	$\overline{\text{PWSENS}}$	I	C	Navigation/R513 power “ON” input
35	$\overline{\text{PWSAVE}}$	O	C	Power save output
36	$\overline{\text{DSENS}}$	I	N	Detach input
37	$\overline{\text{ISENS}}$	I	N	Illumination sensor input
38	$\overline{\text{DLED}}$	O	N	Burglar alarm LED driving output
39	$\overline{\text{SWVDD}}$	O	N	Remote controller power and external light sensing power outputs
40	BLTPW	O	C	LCD backlight output
41	VPOWER	O	C	Video circuit power output
42	NC			Not used
43	MONFLAME	O	C	Monitor frame control output ($\overline{\text{NTSC}}$/PAL)
44	MODE1	O	C	Display mode changeover output 1
45	NC			Not used
46	MODE2	O	C	Display mode changeover output 2
47	MODE3	O	C	Display mode changeover output 3
48	MODELIN1	I	C	Model discriminating input for existence or not of CD ($\overline{\text{CD exists}}$/CD does not exist)
49	NC			Not used
50	IPPW	O	C	IP-BUS power control output
51,52	NC			Not used
53	ILMPW	O	C	ILMPW output
54	$\overline{\text{MUTE}}$	O	C	Integrated mute output
55	SYSPW	O	C	SYSPW output
56	TX	O	C	IP-BUS date output
57	RX	I	C	IP-BUS data input
58,59	NC			Not used
60	$\overline{\text{RESET}}$	I		Resetting
61	VSYNCIN	I		Frame frequency 50/60Hz (VSINC) input
62	VSELIN1	I		VSEL input 1

Pin No.	Pin Name	I/O	Format	Function and Operation
63	VSELIN2	I	C	VSEL input 2
64	REMIN	I		Remote controlling signal input
65	$\overline{\text{ASENS}}$	I	C	ACC sensor input
66	$\overline{\text{BSENS}}$	I	C	Backup input
67	NC			Not used
68	VDD			VDD
69	X2			Oscillator output
70	X1			Oscillator input
71	IC			Connection to grounding circuit
72	XT2			Sub-clock terminal
73	TESTIN	I		Test mode
74	AVDD	I		Analog power for A/D converter
75	AVREF0	I		Reference voltage input for A/D converter
76	LSENS		C	External light sensor input
77	KEYIN1		C	Key input 1
78	KEYIN2		C	Key input 2
79	ANGLEIN		C	Monitor angle controlling analog signal input
80	MODELIN2		C	Destination discriminating analog input

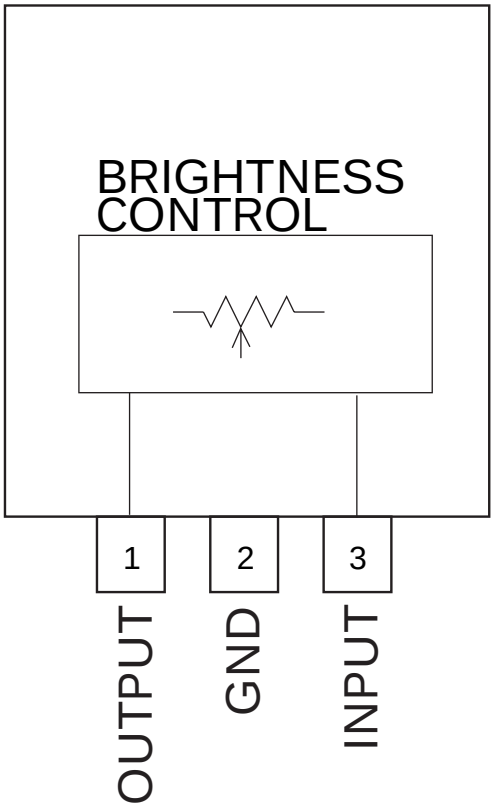
*PE5038A



Format	Meaning
C	C MOS
N	N channel open drain

IC's marked by* are MOS type.
Be careful in handling them because they are very liable to be damaged by electrostatic induction.

PNA4603H00LB



7.3 MECHANISM DESCRIPTIONS

● Outlines of the hardwares

Drive motors

Discharge (position) motor

Angle raising (angle) motor

Sensors

Angle detection rotary encoder

End of discharge detecting switch (“L” when detection is made)

Angle 0-degree detecting switch

End of storage detecting switch (“L” when detection is made)

● Electric conditions

Sensor signals

Encoder

ANGLEIN: Angle sensing analog sensor

Sensor signals

(PUSH)

LIFT SW: End of discharge detecting sensor (“L” when detection is made)

PULL SW: End of storage detecting sensor (“L” when detection is made)

Control signals

MTRPW : Motor power control (“H” when turned “ON”)

MTR1 : Angle motor control signal (“H” when turned “ON”)

MTR2 : Position motor control signal (“H” when turned “ON”)

MTRS : Motor speed control (“L” for high speed and “H” for low speed)

MTRSEL : Motor rotation direction control

(Horizontal IN: H/OUT:

(Angled UP: H/DOWN: L

Motor terminal voltage

High speed mode: VMH = 7.0V

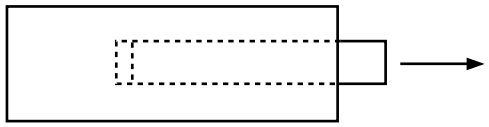
Low speed mode: VML = 6.2V

● Outline of the operation

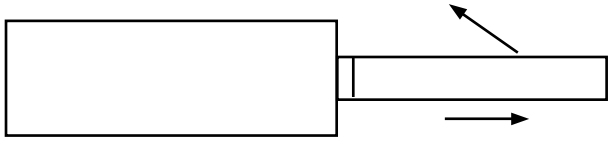
1. The motor will run during the time while the ANGLE +/- key is being pressed and held.)
2. Two motors of the longitudinal direction drive motor and angle control motor work to drive the movements.
3. Analog potential being generated from the angle encoder will be detected to find out the angular movements and positions. Meanwhile, horizontal intermediate position detections will not be made.
4. When the operation is started after resetting, the system goes into the storage stage once, before proceeding to the discharging movement to be started up.
5. Angular adjustments can be performed by use of the angle adjusting keys.
6. By pressing the “OPEN” key once again (or by ACC OFF (While the automatic open-close setting is being turned “ON”)), the system starts storage movement.

● Discharging operations

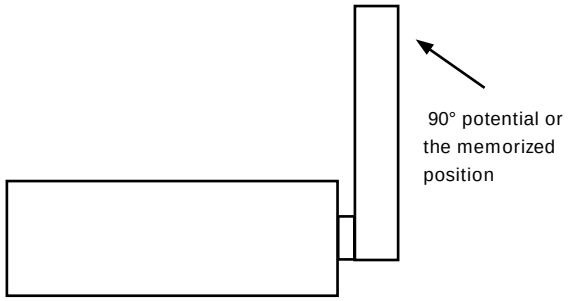
1. When the OPEN key or the ACC is turned “ON”(or detach grille installing), (2 sec. after) the position motor will be activated under the high speed mode.



2. When the longitudinal position sensing switch (PUSH SW)/(LIFT SW) turns H - L, the position motor will be stopped and, at the same time, the angle motor will be activated at high speed.

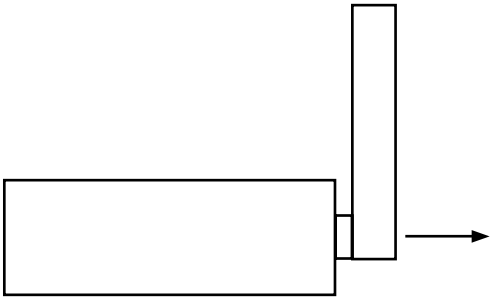


3. When the electric potential of the angle encoder reaches 90° (Reference 0° potential + 3.047V), the angle motor will be stopped. (Braking mode) However, if the preceding angle is being memorized, the angle motor will keep running until the memorized angle can be obtained.

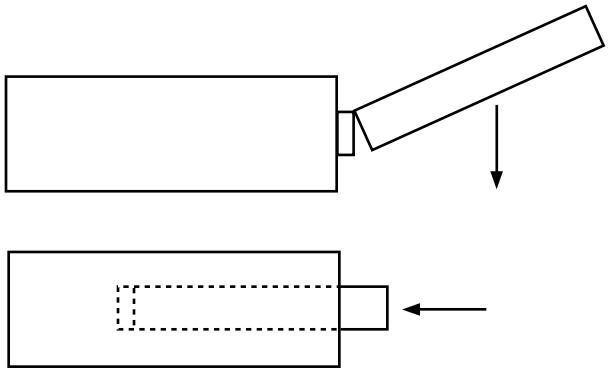


● Storage operation

1. When the CLOSE key is operated (or 6 sec. after turning “OFF” the ACC while the automatic open-close setting is being turned “ON”), the angle motor will be activated at low speed.



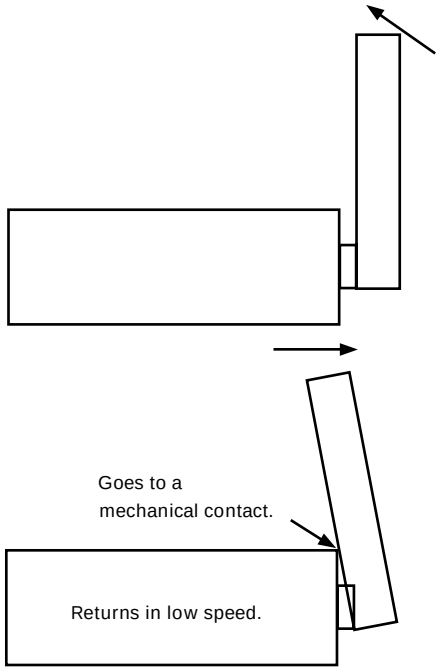
2. At 750ms after the angle 0° potential has been reached, the angle motor will be stopped and the position motor will be activated at high speed. The system will go into stopping movement at the point where the PULL SW is turned “ON” by detection or when the error time is over.



● Angle adjustment

1. For example, from the initial position (about 90°), when the UP key is pressed, the position motor will be activated at high speed for the time during the UP key is being pressed and held. When the UP key has been released, or when a second has passed after the hard-stopper is activated, the system will go under the braking mode.

   The system will operate similarly when making DOWN movements. The lower end of the DOWN movements is at 60° and the system will go under the braking mode when the prescribed potential is exceeded or when the DOWN key is released.



Note:

Position motor : The motor which works to drive the display in the longitudinal direction.

Angle motor : The motor which works to raise or lower (angular direction movements) the display.

● Precautions

1. The angular position will be kept updated while the angle adjusting key is being pressed and held and the last angle will be memorized.
2. When the angular potential does not change toward the expected direction, the system deems it a functional failure to stop the movement at the position.

● Movements of the driving sections under preset modes

Mode settings
Automatic open-close setting : ON
Setback : OFF

ACC operation mode	While in OPEN state Or, while the ACC is being turned "OFF"	During OPEN movements Or, while the ACC is being turned "OFF"	During CLOSE movements Or, while the ACC is being turned "OFF"	While in CLOSE state Or, while the ACC is being turned "OFF"
ACC OFF → ON	OPEN state ↓ Maintains the OPEN state.	–	–	CLOSE state ↓ OPEN movements ↓ Starts reverse movement.
ACC ON → OFF	OPEN state ↓ CLOSE	OPEN movements will continue ↓ OPEN movements will continue ↓ CLOSE	CLOSE movements will continue ↓ CLOSE	CLOSE state ↓ Maintains the CLOSE state.
Last memory	OPEN	OPEN	CLOSE	CLOSE

Mode settings
Automatic open-close setting : OFF
Setback : OFF

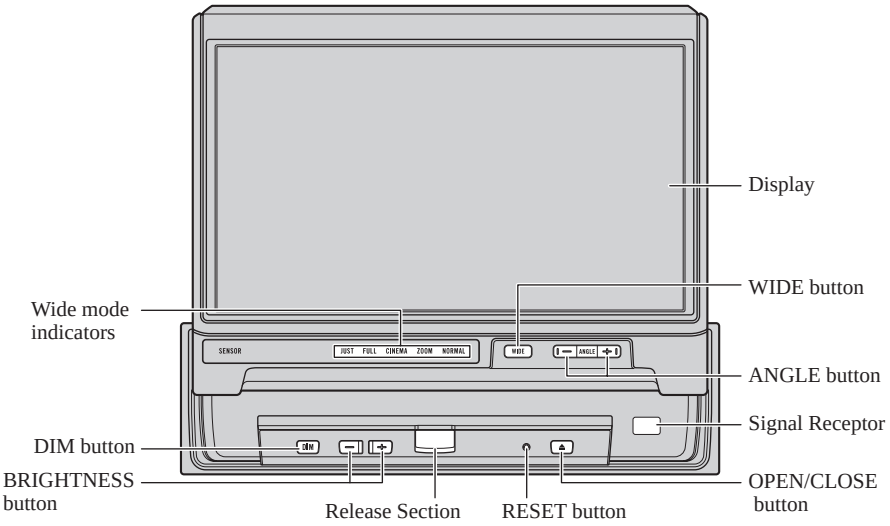
ACC operation mode	While in OPEN state Or, while the ACC is being turned "OFF"	During OPEN movements Or, while the ACC is being turned "OFF"	During CLOSE movements Or, while the ACC is being turned "OFF"	While in CLOSE state Or, while the ACC is being turned "OFF"
ACC OFF → ON	OPEN state ↓ Maintains the OPEN state.	–	–	CLOSE state ↓ Maintains the CLOSE state.
ACC ON → OFF	OPEN state ↓ Maintains the OPEN state.	OPEN movements will continue	CLOSE movements will continue ↓ CLOSE	CLOSE state ↓ Maintains the CLOSE state.
Last memory	OPEN	OPEN	CLOSE	CLOSE

8. OPERATIONS AND SPECIFICATIONS
8.1 OPERATIONS

Key Finder

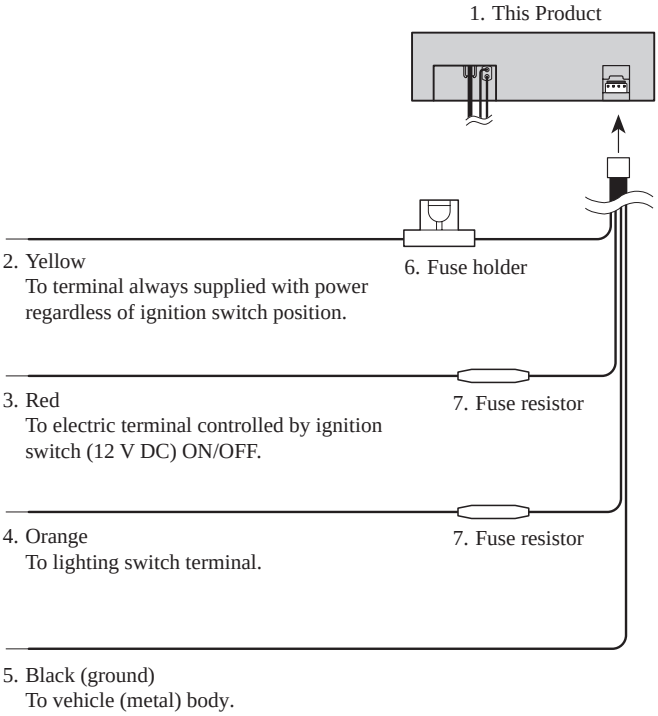
This Product

The following diagram shows the display when it is deployed.



Note:
- Use the remote control products for the AUDIO VISUAL MASTER UNIT by pointing them at this product's signal receptor.

● CONNECTION DIAGRAM



8.2 SPECIFICATIONS

General

Power source ..... 14.4 V DC (10.8 – 15.1 V allowable)
Grounding system ..... Negative type
Max. current consumption ..... 2.0 A
Dimensions
(DIN)
(mounting size)
..... 178 (W) × 50 (H) × 160 (D) mm
(front face) ..... 188 (W) × 58 (H) × 27 (D) mm
(D)
(mounting size)
..... 178 (W) × 50 (H) × 165 (D) mm
(front face) ..... 170 (W) × 46 (H) × 22 (D) mm
(max. salient dimension) ..... 170 mm
(display) ..... 170 (W) × 129 (H) × 18 (D) mm
Weight ..... 1.7 kg

Display

Screen size/Aspect ratio ..... 7 inch wide/16:9
(effective display area: 154 × 87 mm)
Pixels ..... 336,960 (1,440 × 234)
Type ..... TFT active matrix, transmissive type
Color system ..... NTSC/PAL/SECAM Compatible
Operating temperature range ..... –20 to +60°C
Storage temperature range ..... –40 to +85°C
Angle Adjustment ..... 60 — 110°
Initial setting angle: 90°

Note:

- Specifications and the design are subject to possible modification without notice due to improvements.